STUDY OF AIRPOWER

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BEFORE THE

SUBCOMMITTEE ON THE AIR FORCE

OF THE

COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

EIGHTY-FOURTH CONGRESS

SECOND SESSION

AIRPOWER

(LT. GEN. C. S. IRVINE)

MAY 10, 1956

PART VI

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Col. William L. Hamrick, Chief of Aircraft Division, Directorate of Supply and Services, DCS/Materiel.

NOTE.—Throughout the text, topic headings have been inserted to facilitate reference. These topic headings are not part of the testimony per se.

STUDY OF AIRPOWER

THURSDAY, MAY 10, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON THE AIR FORCE
OF THE COMMITTEE ON ARMED SERVICES,
Washington, D. C.

The subcommittee (consisting of Senators Symington, Jackson, Ervin, Saltonstall, and Duff) met, pursuant to notice, in room 212, Senate Office Building, Senator Stuart Symington (chairman of the subcommittee) presiding.

Present: Senators Symington, Jackson, Ervin, and Duff.

Also present: Fowler Hamilton, general counsel; Ramsay D. Potts, Jr., associate general counsel; Fred B. Rhodes, legal consultant to Senator Saltonstall; Edward C. Welsh, assistant to Senator Symington; and Wallace L. Engle, staff member.

Brig. Gen. Thomas C. Musgrave, Jr., Office, Secretary of the Air Force; Lt. Col. Donald S. Bussey, ODCSOPS, Department of Army; Capt. S. S. Searcy, Jr., United States Navy; Mansfield T. Sprague, general counsel, Department of Defense.

* * * * * * *

[The closed session testimony was censored by the Department of Defense for security reasons.

[Those portions of the record affected by this censorship are indicated by the symbol Ⓓ.]

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Senator SYMINGTON. Our next witness is General Irvine. General, will you come up? How many witnesses do you have? Apparently yourself and three others.

Let us swear all four.

Do you solemnly swear that the testimony you are about to give before this Subcommittee on the Air Force of the Committee on Armed Services of the Senate of the United States will be the truth, the whole truth, and nothing but the truth, so help you God?

General IRVINE. I do.

General GERRITY. I do.

General HEWITT. I do.

Colonel HAMRICK. I do.

TESTIMONY OF LT. GEN. C. S. IRVINE, DEPUTY CHIEF OF STAFF, MATERIEL, DEPARTMENT OF THE AIR FORCE, ACCOMPANIED BY MAJ. GEN. THOMAS P. GERRITY, BRIG. GEN. ALBERT G. HEWITT, AND COL. WILLIAM L. HAMRICK

Senator SYMINGTON. General Irvine, we all know of your magnificent record in the Air Force, we want to insert a summary of that record at this point.

LT. GEN. CLARENCE S. IRVINE, UNITED STATES AIR FORCE

Clarence Shortridge Irvine was born in St. Paul, Minn., December 16, 1898. Enlisting in the Air service in November 1918, he was appointed a flying cadet in January 1921, was graduated from flying school at Kelly Field, Tex., October 15, 1921, and commissioned a second lieutenant in the Air Service Reserve. Reverting to inactive status, he entered the University of Nebraska, which he attended for 2 years.

Receiving his Regular commission as a second lieutenant of Air Corps June 30, 1926, General Irvine was assigned as a gunnery instructor and engineering officer at Selfridge Field, Mich., going to Clark Field, Philippine Islands, in June 1929. In July 1930 he went to Patterson Field and Wright Field, Ohio, where he served for 8 years as assistant chief of the Engineering Office. During that time he was also graduated from the Air Corps Technical School at Chanute Field, Ill., and the Air Corps Engineering School at Wright Field. Entering the Army Industrial College in September 1938, he was graduated the following May and returned to Wright Field as assistant technical executive for engineering. He was named assistant chief of the Inspection Division there in March 1940, becoming assistant chief of industrial planning and chief of production control there in May 1941, and executive of the Production Division in June 1942.

The following January General Irvine was transferred to Army Air Force Headquarters in Washington, D. C., as assistant to the assistant chief of air staff for aircraft production, assuming the additional duty of chief of the Modification Division and supervisor of the very heavy bombardment program in April 1944. That September he was named chief of the Supply Division of the 20th Air Force at Washington, D. C.

Going to the Pacific theater in December 1944, General Irvine was deputy chief of staff for supply and maintenance of the 21st Bomber Command. The following October he was named assistant chief of staff for supply of the United States Army Strategic Air Forces, and 3 months later became deputy chief of staff of the Pacific Air Command. In January 1947 he was designated deputy chief of staff of the Far East Air Forces.

Joining the Strategic Air Command in April 1947, General Irvine was assistant to the chief of staff at Andrews Field, Md., becoming chief of special projects, SAC, in August 1948. Moving to Walker Air Force Base, N. Mex., a month later, he assumed command of the 509th Bomb Wing, SAC. In January 1950 he became commanding general of the 7th Bomb Wing at Carswell Air Force Base, Tex., assuming command of the 19th Air Division there in February 1951, and in March 1952 he was assigned to 8th Air Force Headquarters at Carswell.

Returning to Wright-Patterson Air Force Base, Ohio, in September 1952, General Irvine was Deputy Commander for Production of the Air Matériel Command, and 2 years later was redesignated Deputy Commander for Weapons Systems, AMC, there.

Reassigned to Air Force Headquarters on April 28, 1955, General Irvine was named acting deputy chief of staff for Matériel, and on May 10, 1955, was designated deputy chief of staff for Matériel.

His decorations include the Distinguished Service Medal, Silver Star, Legion of Merit with one Oak Leaf Cluster, Distinguished Flying Cross with one Oak Leaf Cluster, Bronze Star, and Air Medal with one Oak Leaf Cluster. He is rated a command pilot.

General Irvine piloted the Pacusan Dreamboat, an Air Corps B–29 with a crew of 10, on a nonstop flight from Honolulu to Cairo in 39 hours and 36 minutes in 1946.

General and Mrs. Irvine have two children.

PROMOTIONS

He was promoted to first lieutenant (permanent) August 1, 1932; to captain (permanent) June 30, 1936; to major (temporary) December 30, 1940; to lieutenant colonel (temporary) January 5, 1942; to colonel (temporary) March 1, 1942; to major (permanent) June 30, 1943; to colonel (permanent) April 2, 1948; to brigadier general (temporary) September 10, 1949; to brigadier general (permanent) January 27, 1950; to major general (temporary) April 11, 1951; to major general (permanent) October 9, 1951; to lieutenant general (temporary) May 10, 1955.

We are honored and pleased to have you with us today, and look forward to your testimony.

I will now turn the questioning over to the Counsel.

Mr. HAMILTON. Thank you, Mr. Chairman.

General do you have a prepared statement?

General IRVINE. I have a statement I prepared that I thought might answer some questions.

Mr. HAMILTON. Would you care to read that at this time?

General IRVINE. Yes. Mr. Chairman, in the area of matériel, which is my field of responsibility, we in the Air Force have made, we believe, substantial progress over the past several years. In the main and all in all, our programs and accomplishments are in consonance with overall Air Force progress toward the goal of 137-wing force.

PROGRESS

Our Air Force and contractor industrial complex is adequate to meet present demands for heavy maintenance, overhaul, modification, and production. Essential specialized facilities and equipment are being programed as needed for production and maintenance of advanced weapons scheduled for Air Force inventory modernization.

Our logistics support mission has recently been placed on a world-wide basis under the Commander of the Air Matériel Command to meet logistics support and mobility demands of the Global Air Force Mission.

We place greater reliance upon airlift for our logistics support more and more, not only because we feel that it gives better logistics support when we are using the airlift, because it responds so quickly to supply and demand situations for these complex, high-value items that we need—not only that, but more important, to reduce our pipeline inventories.

Many other refinements, such as the electronic transmission of data and requisitions for supplies, and the mechanization of inventory control, are underway or programed to meet the future demands of logistics support in this atomic age with ever increasing efficiency.

DEFICIENCIES

We have, however, very serious deficiencies in some areas. We have deficiencies in the area of what we call organizational or squadron level work, as contrasted with the heavy or industrial-type of maintenance, the depot-type of work, where we can use our contractors for our depots.

In order to keep our air fleet in safe operating condition, and enable it to perform its mission with sufficient quantities of combat ready aircraft rquires, of course, three things: skilled personnel, the proper facilities with which to do the job, and the dollars to pay for the portion which we contract with industry.

FACILITIES SHORTAGE

And I would like to call attention here to the fact that we feel (and this has been under consideration and was one of the things that General Washbourne has gone over) our capability to do our job is

seriously detracted from by the fact that in the areas of electronics—and in this area, primarily, because it is new and harder to project our requirements—we find that we do not have the matériel that we need in the way of facilities to provide for all operational fields of the Air Defense and Strategic Air Command.

Now, about one-third of our people in the Air Force are engaged in maintenance work of some kind, some form of maintenance support, so that a deficiency in this area is a very serious problem.

MAINTENANCE SHORTAGE

Since our airplanes are getting more and more complex and more and more difficult to maintain, this problem of quantity and quality of our maintenance people is getting much more important. Obviously, a fighter or a bomber is of very low value if you cannot adequately maintain the communications and fire-control systems—and I presume that our personnel chiefs this morning told you something about our problems of reenlistments. It would like to quote you 2 or 3 figures of vital importance to us, to me, in my area of responsibility.

The radio and radar people, of those about 12 percent reenlisted in 1955. We are doing a little better, about 19 percent in this category this year.

And in the very difficult area of technicians for bomb, navigation, and fire control systems, we went from a low of 11 percent last year to about 24 percent. Now, we have worked harder in this area than in any other.

SHORTAGE OF SKILLED PERSONNEL

Those are just numbers, of course, but they are indicative of the fact that the people who are the most important to us, who have the most difficult jobs, are the people who are of the most importance and most value to industry, and therefore, we lose them. The reason this is important——

Senator SALTONSTALL. Excuse the interruption, but you use the figures 18 to 22 percent in writing here; but if I heard you correctly, you said from 11 to 24 percent——

General IRVINE. Senator, I did not read that last sentence. I read the one above, 11 to 24 percent. You see, I was trying to brief this for you a little bit and I left out that whole sentence.

Senator SALTONSTALL. I see, you left that out.

General IRVINE. Yes, I left it out.

Senator SALTONSTALL. Deliberately?

General IRVINE. Deliberately, because I was trying to brief this for you.

Senator SYMINGTON. As a matter of fact, General, you have already added some things to your written statement, haven't you?

General IRVINE. Yes, sir.

Senator SYMINGTON. And so we cannot expect to be following the written statement literally, is that right?

General IRVINE. Yes. I am trying to use this to bring out the things, Senator, that I think the committee would like to know.

Senator SYMINGTON. Thank you.

General IRVINE. Now, when I say that a large percentage of our personnel are what we call apprentices, that is because of the low

first-term reenlistment rate.. This is important—and again, off the script—this is important because numbers mean very little to us, total numbers. I know, when there have been some numbers given as to how many people we have aboard, what is most important to me in my general area of responsibility is to have the sort of people that can do the job, and this is the whole thinking behind what General O'Donnell and I have discussed many times.

Now, this high percentage of apprentices is one factor that causes aircraft to be out of commission for a longer period of time than would be the case if we had adequate numbers of trained people, and it causes a high turnover of equipment and parts because this means that they must be sent to a depot rather than be repaired on the spot.

We always endeavor to have the minimum number of aircraft out for maintenance, in order to maintain a constant combat-ready potential at all times. However, the rapidly increasing complexity of today's aircraft has tended to increase the number of airplanes that are out of commission for maintenance.

The F–100 is a case in point. The F–100 is not unique in this respect, but the problem is aggravated by the shortage of skilled personnel, and that is due in large measure to the fact that the Air Force has not been able to compete with the salaries paid by industry. In effect, we are running an endless and very expensive training program for the benefit of industry. That does not necessarily mean that we must match industry's salaries dollar for dollar. To digress, I will have to go back about 30 years ago, when we were once told that you could not sell anything in the post exchanges but neckties. This has been a continuous problem, where our enlisted men have been lobbied against by selfish interests—filling stations, grocery stores, department stores, et cetera.

Increased pay, of course, is always a major factor, but there are other things that are very less expensive that the Air Force and the Department of Defense can and must offer, to induce our skilled technicians to make it a career.

These things would include better housing, medical care for dependents—and that becomes important when you consider the location of many of these installations—and all of the other so-called fringe benefits, if we are to have the military support of those people.

We must have adequate facilities to maintain aircraft, engines, and supporting equipment. We cannot do it in the field, as we did in World War II, where we very frequently did the work out in the mud, because that cannot be done now. We cannot do that in the present-day job of maintenance.

For example, in the maintenance of electronic gear, we get into areas where dust, and moisture, and sometimes even temperature changes will put them out of commission and, obviously since the equipment is getting more expensive, we would like, in any way we can, to increase the percentage that is ready to go at a moment's notice.

DISPERSAL REQUIREMENTS AGGRAVATE EXISTING SHORTAGE

And, as I said before, we are short of needed facilities on many bases. Since we were discussing dispersal, and you were when you were talking to General Washbourne, we think that dispersal tends

to further increase the shortage of facilities, because then you have the problem of moving both the people who work on the aircraft, and the equipment; and they must be available or else you just, in effect, lose your equipment.

POSTPONEMENTS

In fiscal year 1956, under an austere budget, it has been necessary for the Air Force to postpone or defer depot maintenance requirements in order to accomplish relatively higher priorities—for example, working on the B–47, rather than doing work on the supporting transports.

The principal areas of depot deferrals, as of April 1, 1956, are as follows:

First, the depot inspection, which means the repair of approximately 1,200 aircraft, most of which are training and support types;

Second, other and much more important depot maintenance requirements, such as aircraft accessories, electronics, communications equipment, and related equipment and materiel.

And, again digressing here, that means that if we have the very expensive materiel on hand and if we are not able to maintain it, we have, in effect, lost the use of this materiel.

Mr. HAMILTON. I am not sure that that is clear, as to just what you meant. I did not wish to interrupt.

Senator DUFF. I did not understand that.

Senator SYMINGTON. Will you repeat that to be sure we understand it?

General IRVINE. Well, for example, suppose that we bought some reasonable percentage of bombing systems, or engines, and we do not have the facilities to overhaul them when needed, then they are of very little value; if you cannot maintain such equipment you lose its usefulness.

Now, there are three ways of fixing that problem. Either you have to buy too many in the first place, so you won't have airplanes without the necessary support; or you provide Air Force facilities; or you rely on contractor support.

Senator SYMINGTON. Yes.

FAILURE TO PROVIDE FACILITIES RESULTS IN SAVING PENNIES, LOSING DOLLARS

General IRVINE. And in this area we are talking in terms of $800,000 for a modern fighter, or $8 million for a bomber, so it is saving a penny and losing a dollar. That is the point.

I want to assure you that this is one area where people like General Rawlings and I have done a great deal of what we call agonizing reappraisal, to determine not what people would like to have done, but to do the things that we felt were essential to get our job done the best we could, and to take our losses where they were the least serious.

Now, talking again of personnel deficiencies, it applies in the Air Force just as it applies anywhere else where the right kind of people are not available. The Air Force has the problem of basic personnel deficiencies in our combat organizations, creating a cancer which saps all Air Force resources. Thus, ultimately, there is not only a quanti-

tative loss in the amount of maintenance accomplished, but the combat capability of the force is reduced.

If you don't have the people in the tactical command who are trained to do the job, then this means that you take people out of the depot organization, or you have to employ a contractor to do the job that the people in the assigned units are unable to do, or you accept a low combat capability.

Now, moving on to another basic area of materiel, we feel that our supply support of aircraft is good. There are areas where support is not as good as we would like it to be, but those areas are largely associated with the introduction of new aircraft into our operational units.

Our rates of aircraft out of commission for parts are within acceptable limits. They are about the lowest, I think, in the Air Force's history.

Another factor to be reckoned with in providing logistics support is the rate of progress in the development of new weapons. Obviously, we cannot wait until a new system has been developed to perfection, or it will be obsolete by the time we get it out.

On the other hand, of course, we balance that against not putting it into production until we have some reasonable assurance that it will perform.

TECHNICAL PROBLEMS INCREASE

Our technical problems are becoming more and more difficult, and the time between the drawing board and production tends to become longer with the equipment which we are building now.

This is due in large measure, of course, to the amount of research and developmental effort and money that can be applied in the case of any given weapon.

We need, obviously, to seek means of compressing the time required to get a new and better weapon into the inventory, if we are going to have a qualitative superiority.

One such approach that I know you are familiar with, Senator Symington, and it is known as the Cook-Craigie plan, is to put a new weapon into production at the earliest possible point, but at a very low rate of production, because during this time we can test the articles and uncover deficiencies and feed the corrections back into the production line while it is proceeding at a low rate.

We do this to save time and money, since it reduces to a large extent, the expensive modifications of large numbers of items.

Of course, my area of responsibility, part of which is production, is contingent upon research and development programs, and the speed with which we can bring our new weapons to the point where even limited production is feasible.

INDUSTRIAL CAPACITY PARTIALLY IDLE

The production capacity of our industrial complex is well above the current levels, from 2 to 4 times the levels we are now using. Once developed, new weapons systems can be produced at whatever rates the programs call for.

I know from previous testimony that the committee is interested in production capacity for additional B–52 and KC–135 aircraft. I

am sure that the committee is aware of our recent acceleration of the B–52 program to a higher production rate. This acceleration was made after a thorough study, not only of production capacity and the need to replace the obsolescent B–36's at the earliest feasible date, but of other programing factors such as personnel, training, and base requirements.

The current rate is believed to be sound when the foregoing elements are considered. However, viewing this problem from a production capacity standpoint alone, industry is capable of substantially increasing current established peak production rate of B–52 airplanes.

This can be done within a reasonable time, utilizing existing sources and with a modest increase in certain specialized facilities.

JET TANKER PROGRAM JUST BEGINNING

As you know, the KC–135 program got underway some 18 months after the B–52 program. Therefore, it is only in its initial stages of production at this time. In fact we get the first production airplane this fall.

Senator SYMINGTON. I didn't quite understand that.

General IRVINE. We get our first production airplane this fall.

Our established maximum production rate for this airplane is designed to attain an appropriate bomber-tanker ratio for the B–52 program as rapidly as feasible.

Production capacity exists for a substantial increase in the rate of KC–135's now programed. This can be accomplished with the current facilities, again with modest increases in specialized facilities, such as machine tools. At the present time, the Air Force believes that the peak production rates established for the KC–135 and B–52 are the optimum within the present program.

The additional capacity which exists in the industry above these rates, provides us the desired flexibility to be responsive to needs for additional aircraft should they be desired in the future.

SKILLED PERSONNEL MAJOR SHORTAGE

In closing, I would like to emphasize that the one area where improvement would yield the greatest dividends is personnel. Retention of our highly skilled technical personnel would improve our maintenance capability, and so would increase the number of aircraft in service. It would mean that substantial resources now being poured into training courses could be applied against other requirements. Improvement in the technical personnel situation would do more than anything else to increase the combat readiness of the Air Force.

This completes my prepared statement, gentlemen. I will be glad to try to answer any questions you may have.

Senator SYMINGTON. Your statement was interesting and constructive.

Mr. Counsel, have you any questions you would like to ask the general?

Mr. HAMILTON. Yes, sir. General, I think it might be interesting if you would describe to the committee the extent to which you have been able to reduce your inventory by the better inventory control and reporting system you mentioned.

INVENTORY REPORTING SYSTEM

General IRVINE. Well, my mind rebels at the way we ran our business in the past, and I think that I can say that we had a horse and buggy supply system for the new supersonic airplanes.

Back in the beginning of the Air Force buildup in 1950, for example, we used to put 70 percent of the cost of the airplane into spares and support, and you would never have enough. Now we are programing this type of equipment at between 25 to 40 percent.

Mr. HAMILTON. Well, if you cut it to 70 percent of the cost——

General IRVINE. Well, I would say reduction form 70 to 40 in one area would be comparable numbers.

Mr. HAMILTON. Cut about halfway.

General IRVINE. So, you reduce about 30 percent, and there are a number of elements in this reduction.

First, General Rawlings and I worked together on this when he was the Comptroller and I was in what is now SAC, trying to get people to realize that the things they were working with were expensive. That was the beginning of what we call our monetary-accounting program, where we put down in supply records what an item costs, to try to get over a new philosophy in this area of monetary value of our materiel. When General LeMay came along, he was positive and helpful in getting people to realize the value of an inventory and the necessity for not having repairable engines or other items of equipment lying around on bases; to get them moved to where something could be done with them, and to get people at all levels within the Air Force interested in keeping equipment in commission and doing the things necessary to have a combat-ready force.

This is trying to get a wartime viewpoint in time of peace, and it is not easy.

The next effort was to look at our supply system, and the time consumed in pipelines. Well, we had cases where it had taken as many as 130 days from North Africa to get a message through channels, and to get it shipped, traveling by boat both ways.

We are now getting a lot of our pipeline supplies down where they are needed in 12 or 15 days, and we are driving for 7. One of the ways that we do this sort of thing is to look ahead and try to see how we really intend to fight the next war, how we are going to fight in this atomic age.

And under this philosophy, we want to put our materiel where the aircraft are, and this is already underway, to have the things there that are necessary for them to fight, to supply them so that they can fight, certainly on an all-out basis, for at least 15 days, and we are working toward the 30-day level, having everything possible where the airplanes are. This gets important when we are talking about dispersal because there is no sense in dispersing airplanes where there is no equipment to put them in commission to fight.

My philosophy is that you just don't disperse and run away, but you take off and drop bombs on your opponents, and to do that, you have to be able to put your airplanes up in the air, because an airplane on the ground is pretty defenseless, you know.

So our philosophy now is to move out to fight. As I see it, the first 3 days is the most important period, and you will have the major military decision in the first 15 days. It is my philospohy as a supply

man to enable LeMay and Partridge to do the very best job that they can possibly do. My responsibility is getting behind them the things that they need to do their job.

STOCKS KEPT LOW

Now, the correlation between that and peacetime operation is difficult. We can keep our stock levels much lower than we have ever in the past, only if we are able to support the units by air in the main, or wherever the airlift will best serve them. Just to keep your Air Force in being and running is an awfully big job, and so, if you can keep the total levels of spares low in the depots, with a 15- or 30-day level at the bases, then it would mean that, if we can do our support by airlift, we can, at a minimum cost, operate in time of peace and have available in time of war the backup as necessary, to do the support of the missiles and airplanes—but this is something that I could talk about all day.

Mr. HAMILTON. Thank you. Now, at the top of page 2 of your statement, you have this sentence:

DEFICIENCIES IN ORGANIZATIONAL AND MAINTENANCE ENGINEERING

We have, however, serious deficiencies in the area of organizational and field maintenance engineering as contrasted with heavy or industrial type maintenance.

What sorts of facilities are those that will be involved in the organizational and field maintenance-engineering? What kinds?

General IRVINE. Well, if you have a deficiency of men, then you don't have everything you need. You don't have everything you feel you ought to have. Now, the sort of things that I am talking about in deficiencies——

Senator SYMINGTON. What was the question?

Mr. HAMILTON. What were the facilities covered by the phrase "area of organizational and field maintenance-engineering."

Are they planes, or what?

General IRVINE. I am talking specifically about jet engine field test cells, and general field organizational equipment to do minor repair work.

Mr. HAMILTON. The kind of things that you are responsible for procuring, General?

General IRVINE. Yes, sir, and there is armament and electronics shops with the test and handling equipment that go with them.

Mr. HAMILTON. I just wanted to get a little concreteness.

DEPOT MAINTENANCE DEFERRED

Now, you mentioned on page 5 that it was necessary to defer depot maintenance. That is near the bottom of page 5.

General IRVINE. Yes.

Mr. HAMILTON. Will you be able to make that up if you get the budget you are seeking in fiscal year 1957?

General IRVINE. No, because inevitably when you make deferrals, you drop out—that is, if you do not do it in the time period in which you plan to do it, you lose the use of the aircraft. Some of them are in

the fiscal year 1957 budget, as are other things that we are very short of—that is, in the area of operations and maintenance——

Senator SYMINGTON. Off the record.

(Discussion off the record.)

General IRVINE. I would like to point out, Mr. Counsel, that just as important as the airplanes themselves are the deferments of maintenance of the component parts of, say, bombing systems, engines, or instruments for support aircraft.

Mr. HAMILTON. And the funds come out of operation and maintenance?

General IRVINE. Yes. Those are annual funds.

LEAD TIMES

Mr. HAMILTON. In the last paragraph on page 6, you mentioned the lead time.

Now, was the lead time on aircraft like the B–52 longer than the lead time on aircraft like the B–36, or the B–24, would you say?

General IRVINE. We are doing better on the B–52's than we ever did on the B–36's because, primarily, I think, we are set up a little better for tooling and the companies' operating procedures are better.

Mr. HAMILTON. What is the lead time on the B–52?

General IRVINE. Well, we call it 18 months at the moment. That is a flexible figure, depending upon just what you mean when you say "18 months." You can handle the lead time on the airframe itself——

Mr. HAMILTON. On the airframe itself?

General IRVINE. Yes, the airframe and it is somewhere between 15 and 16 months, but when you are talking about the engine, that by itself is another 14 months. On the engine, you have to build the engine, and then you have to ship it to the airplane factory, and you have to put it in the production line, which is about 2 months before the airplane goes out of the door—I mean, you are putting together this complicated machine, and to our regret, it usually takes us about 60 days after the airplane comes out of the door before it operates to the satisfaction of General LeMay—so this adds up to 18 months.

Mr. HAMILTON. And 18 months is the reorder lead time?

General IRVINE. Yes.

Mr. HAMILTON. And not from the drawing board.

General IRVINE. No. As I said, these lead times—the lead time on the engine itself might be, I think, about 14 months.

Mr. HAMILTON. 14 months for the engine?

General IRVINE. Yes. But that is not the point, that is, from the time you order the engine until it comes out with the airplane is 18 months, so that is one reason why we say that the lead time on the B–52 is 18 months. Now, the lead time for fire control system is another story.

Mr. HAMILTON. That may be considerably longer?

General IRVINE. Probably 24 months, although we have been more than that in the beginning.

Mr. HAMILTON. So, you have to schedule those in earlier, so to speak; give them a longer lead time in order to have aircraft come out on schedule?

General IRVINE. Plus the fact that in the B–52 airplane you started with a more mature bombing system than the one we started with in the

B–36 and that was an improvement on the one we had in the B–47's, and now we are putting in a much better system as it becomes available for the B–52.

Mr. HAMILTON. Turning now to a different length of time, the time, as you phrased it, between the drawing board and production, can you tell the committee, General, what that time was in the case of the B–52?

General IRVINE. Yes. This is a series of things, starting, as far as I am concerned, in 1944, and Tom Gerrity was on that with me, in 1947, when we changed the airplane from what we thought was an old-fashioned type to a more modern airplane. Senator Symington was then the Secretary of the Air Force, and he knows it was a most difficult period of time, where we had to make the decision to either build something that we were very sure would have been obsolete, or better, to create something that would be a technical gamble but would be a modern bomber that would take advantage of the very latest advances in the aeronautical sciences.

Mr. HAMILTON. And how long did it take from 1944 until the first production?

General IRVINE. We had the first airplane, the Y model, that flew in March or April of 1952, and the other flew about June.

Mr. HAMILTON. About 8 years. How did that compare with the time to produce, say, the F–104—was there much difference? Is it a shorter period?

General IRVINE. Oh, yes. We might say that the B–52 was on the drawing board since 1948, seriously, when we made the decision in 1948, 1949, what the airplane was really going to look like.

Mr. HAMILTON. So you got from the drawing board to production——

General IRVINE. In 1954.

Mr. HAMILTON. About 5 or 6 years.

General IRVINE. Six years.

Mr. HAMILTON. And the fighter took a shorter time?

General IRVINE. Four years. But it is all brought about, counsel, by what your decisions are, the decisions that are involved, you make so many changes.

Senator SYMINGTON. Off the record.

(Discussion off the record.)

COST OF AIRCRAFT

Mr. HAMILTON. In that connection, General, what did the first two B–52's cost with Government-furnished equipment?

General IRVINE. Roughly, $100 million.

Mr. HAMILTON. For the two?

General IRVINE. Yes.

Mr. HAMILTON. Or each one?

General IRVINE. No; both of them.

Mr. HAMILTON. $100 million.

Is it generally true that the first aircraft of any new model costs substantially more than the remainder?

General IRVINE. Yes. That price, like the price of anything else, has gone up. This was the most that we ever paid for an experimental airplane, because it was the biggest and most advanced.

Mr. HAMILTON. And they cost $50 million each.

General IRVINE. That is right. Again, I would like to define what is meant by $50 million—remember, the Air Force production and engineering people started working in 1944 and so did the Boeing people, so from 1944 to 1954 an increasing number of people put their time and effort on the airplane and so, for that $50 million, you did not get much hardware all in one airplane, but you got a lot of engineering effort and a tremendous amount of testing time, testing materials and so on, and for that reason I would say for over the period of 10 years, it was very reasonable.

Mr. HAMILTON. What will the cost of the airplane run currently; that is, with Government-furnished equipment?

General IRVINE. We have two approaches to it; somewhere between $6.2 million or $6.3 million, what we call flyaway cost from the factory, and other things to back up and support the airplane that we call the program cost, they are totaling below $8,500,000.

Mr. HAMILTON. For the total package?

General IRVINE. Yes; for the accessory equipment and all.

Mr. HAMILTON. What are the types included in the phrase "Government-furnished equipment"?

General IRVINE. Well, it varies from airplane to airplane.

Mr. HAMILTON. Well, in the case of the B–52.

General IRVINE. In the case of the B–52, you are talking about such things as the engines and a good many of the instruments, the tires, the bombing system, the navigation system, and the fire-control system.

For the convenience of the Government and on the contract, any one of those things could fall in or out of the "Government furnished" column, really, and the only time we normally put them in the "Government furnished" column is so that we may expedite research, development, and production on an engine like the J–57 that goes in several airplanes. There we can centrally control production and reduce the cost.

REPLACEMENT AIRCRAFT IN THE FUTURE

Mr. HAMILTON. Now, on aircraft like the B–52, are you at the same time studying for replacement aircraft?

General IRVINE. I think that in the main most of us are looking at about three airplanes—the one that you have (the one that you think is obsolete), the one that you are trying to get (the plane that you think is pretty fair), and the one you would like to have, but don't know how to build yet.

Mr. HAMILTON. What is the second aircraft in relation to the B–52?

General IRVINE. Well, we have a couple of airplanes that are in a program. (D)

Mr. HAMILTON. What type of aircraft?

General IRVINE. Well, it is an airplane—I don't know whether I am getting into classified material here.

Senator SYMINGTON. Everybody in this room is cleared for top secret. The policy of the committee is to take everything down unless special request is made regarding something like war plans, in which case the committee will confer and make a decision as to what we will do.

I might add that if you feel that it is important not to have it recorded in the testimony, it won't be taken down. However, if it is taken down, before this hearing is made public it will be gone over and edited by the Secretary of Defense's appointed censor in order that nothing classified is released. (D)

Mr. HAMILTON. What advantages would nuclear power have over jet propulsion?

General IRVINE. Well, the fact that within reasonable limits you can fly for a very long period of time, 500 hours instead of 10. (D)

Senator SYMINGTON. Off the record.

(Discussion off the record.)

B–52 PRODUCTION

Mr. HAMILTON. Now, directing your attention to the present B–52 production that we talked about, what is the present monthly peak production schedule?

General IRVINE. The present actual, at the moment?

Mr. HAMILTON. No; not the actual production, but the peak production presently scheduled.

General IRVINE. Our presently scheduled peak production is 10 per month at Seattle and 10 a month at Wichita.

Mr. HAMILTON. 20 in the aggregate?

General IRVINE. Yes, sir.

COULD BUILD MORE B–52'S

Mr. HAMILTON. You mentioned in the prepared statement you think that could be expanded.

General IRVINE. That is right.

Mr. HAMILTON. To what do you think it could be expanded with existing plants, so to speak?

General IRVINE. Well, you could expand it from 10 to 14 at Wichita with very little action beyond giving orders.

And you could go on up to 45 or 46 airplanes a month, with from 20 to 26 at Wichita with relatively moderate increases in the program. The reason for that is that our tooling plans are flexible, I mean—Senator Symington will remember that our plans in the first place were to set up tooling for 12 airplanes per month. This was a long time ago.

So we always planned very good tooling with expansion capability, and while getting from, say, 20 to 46 a month sounds unreasonable, actually we are working in this present plant on about a 5/3/1 shift ratio.

Mr. HAMILTON. What do you mean by a 5/3/1 shift ratio?

General IRVINE. 50 percent of the people employed work on the first shift, 30 percent on the second shift, and 10 percent on the third.

Mr. HAMILTON. Will you increase that ratio?

General IRVINE. Normally we would increase—in other words, we would man the tooling at full capacity on the first shift, maybe 85 percent on the second and the third, we never wish to get that up to more than 30 percent because we have to have that area for balancing out areas of production where difficulties are experienced.

KC–135 PRODUCTION

Mr. HAMILTON. Now turning to the tanker, the KC–135, what is your presently scheduled program peak production on that, General?

General IRVINE. As I remember it, the airplanes we are planning to put on order will get us up just to the peak rate of 20 a month. In fact, I think it took us up to about 19 as I looked at the schedule the other day.

Mr. HAMILTON. When would you reach that peak under the present program?

General GERRITY. Not for several years. In fact, sometime after we have reached the peak on B–52's. (D)

Mr. HAMILTON. Now, with respect to the tanker KC–135, could you substantially increase your peak production on that?

COULD BUILD MORE KC–135'S

General IRVINE. That is the easiest job of all because compared to the bomber, it is a much simpler airplane. We have studied it very carefully with the Boeing production people and we could easily build 35 airplanes a month at a peak, rather than 20.

Mr. HAMILTON. Easily build 35?

General IRVINE. Yes. I think as I told you the other day, Mr. Counsel, this is not necessarily the way we would do it.

Mr. HAMILTON. No, I understand that. You might explain that for the record.

General IRVINE. There is the possibility, Senator, of spreading the work around and putting people to work. We have other plants like Tulsa, Forth Worth, and Marietta where we might decide to put some of the production for dispersion purposes, and also to get competition and possibly get the price down. We might put part of the job elsewhere if we got beyond 20 a month.

"OPTIMUM RATES"

Mr. HAMILTON. Directing your attention now, General, to the bottom of page 8, next to the last sentence, commencing on that page it reads:

"At the present time the Air Force believes that the peak production rates established for the KC–135 and B–52 are the optimum rates within the present program."

I wonder if you would please describe for the committee what "optimum" means in that context?

General IRVINE. I am not a disciple of Webster, but what I meant was considering all things involved. Obviously if I were LeMay, I would like to have us build 50 a month, to get the inventory complete to whatever number he is supposed to have as quickly as possible.

Mr. HAMILTON. By "present programing" you mean the total number now programed?

General IRVINE. Yes, whatever the number is programed.

Mr. HAMILTON. This is the orderly rate to produce to achieve the present program.

General IRVINE. Yes, with the 1957 budget it will be about 500 B–52's. If the decision is made to buy a greater number than that,

you still wouldn't want to go beyond 20 a month unless the number was considerable, because again this is purely a matter of production costs.

It is terribly expensive to teach a lot of people how to build an airplane and let them run at a big rate for a month or 2 and then chop it off. So we like to plan ahead on what we might do, and so considering the fact that we are pretty austere in the completion of bases and proper equipment and in the training of people, in addition to increasing the production rate on the B–52, there are other things that need to be done in consonance that are just as important if you want to have a fighting Air Force.

Mr. HAMILTON. Thank you, General. Directing your attention now to the fighter type of aircraft in general and the F–104 in particular, what is the situation there with respect to the availability of facilities for increasing the rate of production?

COULD BUILD MORE F–104'S

General IRVINE. We could build it at a rate I would say easily five times what we are doing after initial production is well underway again, because it is an easy airplane to build and because the company that built the engine has a pretty tremendous capacity with their subcontractors.

However, I would not recommend producing the airplane at least appreciably beyond our present acceleration because we have had flight experience only with a couple of experimental models.

We have very few coming in before the year is out, of production airplanes, so again from the conservative approach, the initial acceleration is, as I say, reasonable. (D) I think it is a good average.

Senator SYMINGTON. May I ask a question for clarification? Is that because you are not yet entirely satisfied with the airplane?

General IRVINE. The airplane has been so good I am sure there must be something wrong with it that I haven't found out yet.

Senator SYMINGTON. You had two and lost one, as I remember it. My only point is the slow acceleration. We are thousands of fighter planes behind the Communists. If you believe in the airplane, why don't you make more of them?

"AUSTERITY" POLICY

General IRVINE. It is a question of how much of a gamble you want to take, sir. When we are operating under a condition of austerity across the Air Force, you are less inclined to take those gambles like we did with the B–29 in World War II where we bought them off the drawing board without regard to the consequences.

Senator SYMINGTON. And the B–47 after the war.

General IRVINE. Yes, sir.

Senator SYMINGTON. In order to get them quickly for protection.

General IRVINE. Yes, sir. But the performance of the airplane so far, and I have had reports on it no later than last night, the F–104 airplane with the original experimental engine and not even the service-test engine has exceeded its performance at 40,000 feet.

Senator SYMINGTON. I didn't mean to interrupt you.

Mr. HAMILTON. I was just going to say, General, I had the impression—I may have been wrong—that on one of the occasions when we talked, you suggested at least the possibility if you bought a few more of the early models of the 104, you could get through the test period quicker. Is there something wrong in that?

General IRVINE. We have passed that period of time. We bought one or two experimental airplanes. We should have bought 10.

Mr. HAMILTON. Originally we should have?

General IRVINE. Originally we should have bought more than two experimental airplanes.

Mr. HAMILTON. You referred to "conditions of austerity." If the decision were made to increase the number of F–104's to be purchased am I correct in my impression that that decision is not your responsibility? Your primary responsibility, General, is to get the stuff once it has been decided, or am I wrong in that?

General IRVINE. Yes; my responsibility is to make the program. However, I can't evade the responsibility as a member of the Air Staff in participating in the decision. I wouldn't.

Mr. HAMILTON. But if the decision were made to purchase more of the F–104's, would that take money away from other things that are programed?

LIMITED FUNDS NECESSITATE CHOICES

General IRVINE. If you are operating with a limited amount of money on an annual appropriation, yes, of course.

Senator SYMINGTON. Are you operating under a limited appropriation?

General IRVINE. We operate on the money essentially that is appropriated each year.

Mr. HAMILTON. In connection with the alert concept presented by General LeMay, were you here when General Washbourne testified as to what his judgment would be of the cost of that program from the standpoint of construction?

SAC ALERT WOULD COST MORE MONEY

General IRVINE. Yes; I was here.

Mr. HAMILTON. Would putting the alert concept into effect increase the cost of the procurement?

General IRVINE. It would increase it.

Mr. HAMILTON. In the area you administer?

General IRVINE. Somewhat. The majority of the increase would be in the construction area providing basic facilities in the dispersed areas, and to have such things as alert hangars and so forth.

We would have some increase certainly in additional ground handling equipment, starting equipment, and so forth to reduce time required to get a fleet in the air.

Mr. HAMILTON. That concludes my questions at the present time, Mr. Chairman.

Senator SYMINGTON. Senator Duff?

Senator DUFF. I merely want to say, General, that I think you have given us one of the most constructive expressions of opinion in the thing that we have heard. I was very much impressed by what you had to say.

General IRVINE. I have been in this for 39 years, Senator.

Senator SYMINGTON. Senator Ervin, any questions?

Senator ERVIN. No questions.

Senator SYMINGTON. General, I have a few questions here, if Senator Jackson will let me violate our normal procedure, because he has just come from a hearing he was chairing.

MORE THAN SUFFICIENT CAPACITY

I was much interested in your answers to Mr. Hamilton. You say the Air Force contractor industrial complex is adequate. In fact, I think you used the words "completely adequate" when you left the text a bit at that point.

What do you mean by "adequate"?

General IRVINE. Essentially, Mr. Chairman, I mean that we can more than meet the requirements now placed upon industry to produce for the Air Force.

Senator SYMINGTON. If world conditions worsened, would you like more of an industrial complex?

General IRVINE. Yes, but my feeling has changed somewhat in the last 2 or 3 years, sir, about what we want.

Having a dead plant full of machine tools is of little value. Having a plant running such as North American at Columbus where they are building maybe 20 airplanes a month in a plant which can build 200, that kind of a complex has real merit because you can speed it up fairly fast.

MORE AIRLIFT WOULD INCREASE EFFICIENCY

Senator SYMINGTON. You mentioned airlift for logistic support. If you had more airlift for this purpose, could you materially improve your logistic support?

General IRVINE. You can save more money in the spares you don't buy, than the logistic airplanes would cost, and you can do a better job in time of peace and a lot better job in case of an emergency.

Senator SYMINGTON. That is interesting because, as you know, the responsibility for airlift for the Army is given to the Air Force; and I am glad to hear this additional reason for more airlift. How many true airlift planes did we purchase in the calendar year 1955? Did we buy any more C–124's?

General GERRITY. No, sir.

HOW MANY CARGO AIRLIFT?

Senator SYMINGTON. Then how many C–130's and C–133's did we buy in 1955, and if there are any other planes besides those two that are extensive airlift planes, how many did we buy?

General GERRITY. In the calendar year 1955 or in the fiscal year 1955?

Senator SYMINGTON. Let's take the fiscal year, if that is easier for you. (D)

Well, it's clear that by this time you have hardly any C–130's and C–133's. However, suppose you furnish for the record the number of

transports beyond the support planes—furnish them all, number of C–123's, fiscal year 1955 purchased, number delivered, number of C–123's, fiscal year 1956 purchased, number delivered, the same plan for 1957 and 1958, and then the same thing for the C–124's, the C–130's, the C–133's and any other airlift airplane that you plan, will you submit that for the record.

General GERRITY. Will do.

Senator SYMINGTON. Thank you.

(The requested information classified "CONFIDENTIAL", has been filed with the subcommittee.)

MAINTENANCE DEFICIENCIES

General Irvine, you mentioned serious deficiencies in organization and in field maintenance engineering. The only one you have touched on to any extent was personnel. What are the other deficiencies you referred to?

General IRVINE. Well, I contrast that with the heavier industrial type in our depot system and in our contractors' plants where we were able to do the big jobs.

The organizational maintenance is that at the squadron level where you need hangar facilities and protective cover in the northern areas, and you need the backup facilities which you really call field maintenance. These are the electronic shops and hydraulic shops, the facilities to do fieldwork, for example, field maintenance on jet engines.

You see, by accomplishing field maintenance on our J–47 engines we have reduced spare engine requirements, so we have been able to actually cancel thousands of engines. We have been able to get the flying time between depot overhauls up from 50 hours to where we are now passing 1,500 hours. It is because we are able to take the engines out and do the preventive type maintenance in the field that we saved on procurement of a very expensive piece of equipment.

But this does mean that you have to have a test bed to run the engine on when you finish work on it. You have to have this to work with.

"AUSTERE"

In this area it has been pretty austere. We haven't been able to do quite the job we would like to do. Here again, I think we could spend a little more money in this area and in the overall we would be financially ahead.

Senator SYMINGTON. When you use the word "austere," and it is being used extensively now—a new word, like old "directive"—by "austere" what you really mean is you have enough money to do some things, but you haven't enough money to do other things; is that correct?

General IRVINE. Well, I think any person with an orderly approach to the solution of a problem will list all the things that they must do, and the things that you think are important and the things that you think are luxury items.

Senator ERVIN. If you will pardon an interpolation, that word always meant to me getting along without some of the things you just have to have.

General IRVINE. Senator, I was about to say that austerity means to me that you are not able to do all the things that you think are important in the first group.

Senator SYMINGTON. That is what I want to know. Now you emphasize your personnel problem and indicate that a high reenlistment was a remedy.

Isn't it true—and this refers to some of the testimony General Partridge gave us as to what is needed in a wing now compared to years ago—isn't it true that as new aircraft get more complex, it requires steadily more people to maintain them?

MORE COMPLEX EQUIPMENT

General IRVINE. Yes; that is normally true in man-hours, because there are more pieces, there is more work to do.

Senator SYMINGTON. More complicated materials.

General IRVINE. We are talking about a thousand vacuum tubes instead of 20.

Mr. HAMILTON. In what type of aircraft, sir, in the illustration?

General IRVINE. I think we figured out in the B–36 one time we had 2,800 vacuum tubes from one end to the other.

Mr. HAMILTON. The B–36?

Colonel HAMRICK. May I give you a couple of examples of equipment?

Senator SYMINGTON. Have you been sworn?

Colonel HAMRICK. Yes, sir, I have.

Senator SYMINGTON. Will you give your name to the reporter?

Colonel HAMRICK. Hamrick. In the E–4 fire control system for the F–86D aircraft, we had 220 vacuum tubes.

Now comparing that with the same type of fire control system for the F–102, which is one of our current types, we have 400 vacuum tubes, and the point is here are two fighters relatively new coming along, and this shows the increasing complexity over the recent fighters.

PERSONNEL CEILINGS

Senator SYMINGTON. Will you give the committee your personnel authorization ceilings for the Air Materiel Command for the fiscal years 1950 through 1956. If you haven't those figures on hand, please furnish them for the record.

Is it not true these figures will show there has been little if any increase in personnel, despite the fact there has been a steadily increasing personnel requirement, primarily because of the increasing number of wings and the increased complexity of the equipment?

General IRVINE. I believe we have testified before Congress, I know General Rawlings and I have both stated, that the people we now have on board in the Air Materiel Command are less than the number we had 4 years ago.

Now this is not accidental. We have endeavored to reduce the number of people in supply by mechanization, and we reduced the number in maintenance by 14,000 during this period.

(The requested information is as follows:)

The June 30 civilian authorization for AMC for each year since 1950 is as follows:

1950	85,411	1954	148,429
1951	144,591	1955	156,085
1952	175,499	1956 (Apr. 30)	*194,848
1953	163,553		

*Increase in 1956 authorization reflects the transfer of overseas theater logistics depot personnel to AMC from FEAF and USAFE. The bulk of these overseas authorizations are filled by indigenous personnel.

PROCUREMENT EXPENDITURES

Senator SYMINGTON. Expenditures for major procurement this fiscal year are estimated at being less than in any year since the fiscal year 1952; is that correct?

General IRVINE. For fiscal 1957?

Senator SYMINGTON. Expenditures for major procurement in this fiscal year, 1956, are estimated at being less than for any year since the fiscal year 1952.

General IRVINE. I would have to get the information on that, sir.

Senator SYMINGTON. Will you get the figures on that?

General IRVINE. I will.

Senator SYMINGTON. What is the estimated amount for the fiscal year 1957?

General IRVINE. I would like to put that in the record.

Mr. HAMILTON. You want to supply that for the record?

General GERRITY. Can we supply that for the record?

Senator SYMINGTON. That is 1956. Will you furnish that for the record?

General IRVINE. Yes, sir.

Senator SYMINGTON. Why have expenditures gone down in face of rising costs and more expensive equipment?

Senator JACKSON. Why are you saving money instead of buying planes?

General IRVINE. Well, the expenditure is based on the program that we are directed to implement.

Senator SYMINGTON. Would you mind repeating that answer again?

General IRVINE. Well, essentially the expenditures are based on the procurements that were made at a preceding time 18 to 20 months before.

CHANGE IN PROGRESS PAYMENTS DELAYS EXPENDITURES

General GERRITY. Mr. Symington, this may not be a complete answer to this question, but there is one factor that has been current for the last 12 or 15 months which has influenced expenditures during this time period, and that is we have gone off the 90-percent progress payments that we had during the Korean period when we had the big expansion and have gone back to a 75-percent progress payment on our major procurements. This has tended to have the effect of a one-time reduction in expenditures.

Senator JACKSON. You have a bigger lag there so it shows a one-time saving.

General GERRITY. That is correct.

Senator SYMINGTON. Expenditures for the fiscal year 1957 for major procurement are estimated to be smaller than in fiscal years 1955 or 1954; is that correct?

General GERRITY. I would have to supply that.

Senator SYMINGTON. Will you supply that for the record, and also what is the estimated amount for next year; that would be 1957?

(The requested information is as follows:)

Net expenditures (Treasury basis)

	Aircraft and related procurement	Major procurement other than aircraft
Fiscal year:		
1952	$4,366,097,188	$467,308,842
1953	6,437,880,857	600,929,147
1954	6,909,410,196	855,897,106
1955	6,959,282,055	1,066,410,224
1956	[1] 6,000,000,000	[1] 1,085,000,000
	[2] (355,400,000)	[2] (140,400,000)
1957	[3] 6,357,000,000	1,000,000,000
	[2] (304,300,000)	[2] (338,200,000)

[1] Apr. 12, 1956, revised estimated expenditures.
[2] Reimbursements earned from MDAP common item orders.
[3] Includes estimated expenditures to result from supplemental appropriation $248.5 million.

As I understand it, the budgets of the field commanders are exactly what you all think you need, to the best of your ability. Is that right?

General IRVINE. Those are always our going-in figures.

DEFICIENCIES IN FACILITIES

Senator SYMINGTON. You stated we must have adequate facilities to maintain aircraft engines and supporting equipment. Will you give us some examples of deficiencies you face now?

General IRVINE. Well, we have a long list of things, but I covered it before, I believe.

The two most important items I think are the communications and electronics shops in the field and shops for the field maintenance and repair of our jet engines. Essentially those things which do not exist in industry. I would like to say for the record that we are doing more than half of our overall depot maintenance by contract with industry. We are going toward a 60 percent figure, so again in an effort to save expenditures and reduce personnel on board, we are maintaining or reducing our AMC structure and are continuing to put the work out to industry.

Senator SYMINGTON. You say you are short of facilities on many bases. Please detail some of those shortages.

General IRVINE. Well, I would like to furnish a list for the record of that. General Hewitt can put that in the record.

General HEWITT. These are fallouts for the 1957 programs.

Senator SYMINGTON. What is a "fallout"?

General HEWITT. These are the items that we will not be able to construct or install out of the 1957 requests.

Senator SYMINGTON. Will you read them please, or have somebody read them so that the committee understands. Just run through a dozen.

General HEWITT. These are jet test cells, sir, for the minor repair of jet engines at ADC bases. There are 23 ADC bases, sir.

Senator SYMINGTON. That is illustrative, is it, of what you mean?

General HEWITT. Yes, sir.

Senator SYMINGTON. Will you furnish the rest for the record, then? That will be all right.

General HEWITT. There are some items other than test cells, sir. There are certain hangars for SAC at certain of the SAC bases, and some armament and electronic shops at certain SAC and TAC bases.

Senator SYMINGTON. That you are short of, is that right?

General HEWITT. We will be unable to program for the funds that are now in the 1957 budget.

SHORTAGE OF FUNDS

Senator SYMINGTON. Because of lack of money?

General HEWITT. Yes, sir.

Senator SYMINGTON. Will you furnish those for the record, please?

(The items above referred to are as follows:)

Maintenance items deferred by lack of funds

Command	Base	Description	Scope (square feet)	Dollar amount
SAC	Lincoln	Hangar, nose/wing	113,000	2,462,000
SAC	Lockbourne	do	141,350	2,483,000
SAC	Loring	do	226,160	1,063,000
SAC	MacDill	Dock, aircraft	7 each	547,000
SAC	Malmstrom	Hangar, nose/wing	56,540	1,016,000
SAC	Plattsburg	do	113,080	2,230,000
SAC	Davis-Monthan	Shop, armament and electronic	10,961	165,000
SAC	Westover	do	25,124	384,000
TAC	Greenville	do	24,440	417,000
TAC	Seymour-Johnson	do	25,124	421,000
MATS	Dover	Hangar—Organizational	41,066	864,000

Senator SYMINGTON. You list several deferrals. You indicated other depot maintenance requirements that have deficiencies in accessories, electronics, communications, and other equipment. Would you give us some examples of deferrals in each of these areas together with the commands that this shortage affects?

General HEWITT. Excuse me, sir, I didn't know you were talking to me.

Senator SYMINGTON. You list some deferrals. You indicated other depot maintenance requirements that have deficiencies in accessories, electronics, communications, and other equipment.

General IRVINE. I will give you one example.

Senator SYMINGTON. Would you give us some examples of deferrals in each of these areas, together with the commands that this shortage affects?

General HEWITT. Most of these deferrals, sir, are in aircraft, or in second-line aircraft. Primarily they are administartive aircraft, sir, such as C–45's, C–47's, and aircraft of that nature.

In many cases the inspection and repair period has been extended. Normally they would be in at the completion of 3 years in service.

Due to a lack of funds during the current fiscal year, sir, we have been unable to put those into depot repairs, so we have deferred the maintenance on those low priority aircraft.

ACCIDENTS

Senator SYMINGTON. General, if a man crashes in a C–47, he is just as dead as if he crashed in a B–47, isn't he?

General HEWITT. That has been our contention, sir.

Senator SYMINGTON. You have had more accidents as a result of maintenance than you would have had if you had had all the maintenance up to snuff?

General HEWITT. The figures actually show, sir, that our accidents due to material failures during this past year have been on the decline. I think that has been due to the extra effort on the part of the technical personnel to keep the airplanes flying.

Senator SYMINGTON. Wouldn't accidents have been on a still further decrease if you had had the maintenance that you wanted to have? That has been the testimony of some of the other commands.

General HEWITT. I think that is so, sir.

General IRVINE. Of course, one way to fix it, Senator, is if you don't like the airplane you just don't fly, so you don't get the job done.

SUPPORT INADEQUACIES

Senator SYMINGTON. You say there are areas where support is not as good as you would like it to be. What are those areas? What new aircraft do they affect?

General IRVINE. Originally, on any new airplane, I would say the F–100 is probably an example, we found, after operating the airplane in squadron and wing-sized units that there were some items and usually these are small things such as gaskets and hose connections and things of that kind—that we did not provide enough of to meet the going rate.

Now, in part, here we get back to the personnel angle; where you have relatively inexperienced people working on airplanes, you have a lot more damage.

This is something we do a great deal of work on and follow very closely, and in the area of the B–52, for example, we did a much better job there because it was more similar to the B–47's.

Our past experience was more useful. The F–100 is really our first supersonic airplane, so we are getting into an unexplored area where our forecasts just were wrong some places.

"FLY BEFORE YOU BUY"

Senator SYMINGTON. Am I to gather that you are an advocate of the "fly before you buy" concept as being the better concept?

General IRVINE. There are as many answers to that question as there are airplanes. If the airplane you are buying is not a great forward step, if you are buying another transport or a fighter which is a small advance over a previous airplane, then you can afford to buy that sort of an airplane, pretty much off the drawing board, without a lot of preliminary testing.

When we get an airplane that is as advanced in concept as the F–104, we feel it proper to buy a few airplanes and fly them, to see if the straight thin wing with a small high-performance engine, would really do what we hoped, and in this area, this is where I think we should fly before we buy.

You take a considerable risk when you do what we have done on the 102 and the 104, for example, where we create production tooling before we really have too much operating experience.

Senator SYMINGTON. When you say "risk," you mean risk in money; isn't that right?

General IRVINE. Yes, sir; what you save is time. And so we incurred some costs on the F–102 program, I think, as you well know, sir, because with the original flight tests of the airplane after we had 10 of them flying, we began to find out that our aerodynamics calculations were not quite correct, so we had to change the shape of the fuselage.

So pretty obviously, we had to change all the tooling for the fuselage construction. This costs money. But, again, it saved time.

Senator SYMINGTON. What system did you use with the B–66?

General IRVINE. Well, it was in theory the fly-before-you-buy policy, because we were supposed to buy the Navy A–3D, but by the time we adapted it to Air Force high-level and low-level bombing requirements, there were quite a number of changes in it.

There we did the same thing we did with the F–100. When we found out we had some problems, we just held the production right down until we got them fixed.

Senator SYMINGTON. How many B–66's have you delivered?

General IRVINE. Not very many.

Three or four?

General GERRITY. More than that, sir. (D)

Senator SYMINGTON. Were they accepted by the Air Force?

General GERRITY. Yes, sir. (D) That is one the B–66, all versions of it.

General IRVINE. Some of them were in test programs. We are just beginning to put them in tactical units now.

SOVIET PRODUCTION EFFICIENCY

Senator SYMINGTON. Why is it, do you feel, that the Soviets are able to shorten their lead times as against our methods of operations? Do they work around the clock? Do they concentrate more?

Gen. Bedell Smith, for example, said that one of the surprises was to see a new Russian plane prototype over Moscow, be told that they wouldn't have any quantity for some time, and then the next year see a great many of them in flight in one formation.

I know you all must have discussed that, not only in the aircraft field, but also in other fields.

You are probably the most experienced production man in the Air Force. How do they do that? What makes it possible for them to beat us in shortened lead time?

General IRVINE. They have men who might be a combination of people like Bill Irvine, Bill Allen, and Kindelberger, who are both military people and have engineering background, Tupelev being probably a good example, who were set up really as czars, with complete authority in an area to press ahead with the program which, in all probability, had only received policy approval.

And then, placing behind that program resources and people and money, with practically no limitation; that if he felt it necessary to build 10 or 500 test articles, they built them. If he felt it was neces-

sary to have a hundred or a thousand people working on the job, they worked on it.

And, of course, there were no strikes or personnel transfer problems, so there was a continuity of effort in these programs.

And also, there is the reward to the people. Some of the information we had amazed me as to the rewards in the Soviet Union, to the scientists or engineers or professional soldiers that achieved something. He doesn't get an award, such as a membership in the Rotary Club. He gets $100,000 in cash.

I think the most important of all is the position in the social and economic structure of the Soviet nation, of the people who are outstanding, or even above average, in the aspects of design and production. The penalties the other way, of course, are equally severe.

So I would say, with the democratic system, we have a most difficult target to do the same things they are doing under their present system. I don't know how fragile that system is, but in the last 10 years it has produced perfectly amazing results, and I would say that we need in this country to do a great deal more than we are doing now, if we hope to keep up with them.

Senator SYMINGTON. It is true that we are not keeping up with them, is it not?

SOVIETS CLOSING THE GAP

General IRVINE. Well, I think you might say it this way: that we started out with a very wide margin of superiority. At the moment—and this is purely a personal feeling, from my own study of intelligence reports, production data, and what I know about what we are doing—we are still ahead, I believe, on the broad front.

The thing that worries most of the old-timers is the rate at which they have been closing the gap, and the obvious inference, unless very positive action is taken on a very broad front in this country, they are going to be ahead of us in all areas.

POSITIVE ACTION NEEDED

Senator SYMINGTON. Have we taken that action to date, in your opinion?

General IRVINE. No. I started with the fundamentals of getting the high-school boy to take an engineering course in college. That is where you begin.

SOVIETS EXCEED UNITED STATES IN SCIENTISTS AND ENGINEERS

Senator SYMINGTON. Does it worry you, the fact that it is now generally admitted they are graduating a great deal more scientists and engineers than we are?

General IRVINE. Senator Symington, I have been worrying about this for about 5 years.

A "SOUND" PROGRAM

Senator SYMINGTON. Now, as you know, General, we set up Willow Run for 600 B–24's a month in World War II. We never got there because the war ended, but we intended to.

I realize the B–52 is a different airplane. You say the current rate on the B–52 is "believed to be sound." What do you mean by "sound?"

General IRVINE. This is in consideration of all the factors involved. If you increase the rate of production on B–52's you, of necessity, are making the assumption you are going to build more than those presently programed. Obviously, if you are going to build, say, 600 airplanes—I have looked at the curves and the number—you would advance the date when you would have 600 airplanes by a matter of only 3 or 4 months, if you increased the rate from 20 to 45.

If you make the assumption you are going to increase the number of heavy wings, then at the same time, you have to make the decision that you are going to increase the number of trained people to handle those airplanes when they get them, and to provide the necessary base complex and environment.

In other words, you have to look at it on the basis of a complete program.

Senator SYMINGTON. In other words, if you had some eggs, you would have some ham and eggs, if you had some ham.

So in reverse you don't want to increase the B–52's because you haven't the trained people; or you don't want to increase the people because you haven't the B-52's; or you don't want to increase either because you haven't the bases. Is that a fair position? Isn't that a fair premise to the way you use the word "sound"?

General IRVINE. I say that you must increase the entire program of personnel and bases if you increase the aircraft program.

Senator SYMINGTON. That is what General Vandenberg said, did he not, in 1953? He warned if we cut the people then we would have the planes now but not the people to fly them. That was his 1953 testimony, in open hearing, before the Senate.

General IRVINE. Senator Symington, I think it has always been true that the airplane, the hardware, has always been the dramatic thing, the thing that is easy to defend because you are talking about tangible things and large packages that you can look at.

It is always most difficult to defend the fact that the sergeant ought to have a commissary or a post exchange to go to, and he ought to have a decent uniform or a decent place to live. Those are hard things, because you are talking about a lot of individual people.

On the matter of bases, sure you could operate B–52's off a field as bare as the top of this table, but they wouldn't be any good very long, because when they went out of commission you couldn't fix them.

That is the reason people like General Hewitt and General Gerrity and I, who have spent our lives in this business, we talk about the necessity for the backup so that the new airplane, when it sets down, isn't just a picture in a frame. It is something that has life and capability to do its job, to do its assigned mission.

Senator SYMINGTON. General, you used the word "sound." Would you say our production of B–52's is sound, with respect to keeping us equal to Russian intercontinental bomber production?

If you want to answer, General Gerrity.

General GERRITY. All right. May I comment?

General IRVINE. Go ahead.

General GERRITY. I believe, Senator Symington, that the maximum production rate now, the 20 a month rate, is sound——

Senator SYMINGTON. Wait a minute. We are not making 20 a month; we are making 5 or 6. (D)

Based on the intelligence we get, that is not equal to the planned Russian production today, or even at peak. What are your comments on that? I am asking the questions with the premise of the way you all use the word "sound."

General GERRITY. I was relating the term "sound" to our own program, Senator Symington.

Mr. HAMILTON. I think that there may be a confusion, in fairness to the General, which you would want to clear up.

Senator SYMINGTON. I would appreciate it if you would clear me up.

Senator JACKSON. I think what he has in mind, it is sound if you say the number of wings that SAC is going to have; isn't that what you are getting at?

PROGRAM IS "SOUND" FOR QUANTITIES PRODUCED

General GERRITY. That is correct; from a production viewpoint, looking at the quantities we have in mind, Senator, we believe that the maximum rate of 20 a month that we are programed to now is sound.

Senator SYMINGTON. Based on the amount of money that is allowed you?

General GERRITY. Based on the programed quantities.

Senator SYMINGTON. The B–36 was first ordered in 1940. The first mockup I saw of the B–36 was before we went into World War II. So it is fair to say it is an obsolescent to obsolete airplane. Is that a fair statement?

General IRVINE. That's right.

IS PRODUCTION PROGRAM "SOUND" FROM SECURITY ANGLE?

Senator SYMINGTON. Therefore, from the standpoint of the security of the United States, the quicker we replace them with B–52's, the better; isn't that a fair statement?

General GERRITY. Yes, sir.

Senator SYMINGTON. Then, how can you be satisfied with 5 or 6 production a month, especially when the Soviets are producing a lot more of their intercontinental jet bombers than we are, and we know the B–36 is just about obsolete?

General GERRITY. Sir, we are not satisfied with 5 or 6 a month, and we are accelerating up to this 20 a month level as rapidly as possible.

Senator SYMINGTON. How can you be satisfied with something that isn't sound? I am not trying to get into semantics, but would like to get this clarified.

General IRVINE. I would like to make a point here, Senator, if I may.

To go back to some testimony that I presented earlier during the period when you were Secretary of the Air Force, we had a very difficult time deciding what the configuration of the airplane would be and what the technical gambles were, and we made what I feel was a very sound decision at that time.

But due to the tremendous cost of the prototypes, we delayed going ahead on the program until we had some flying, before we took some very real action. We took some gambles before that.

In that time period we were concentrating on high production and other areas to meet a very immediate requirement. We were not worrying about the long-range picture in the Korean war as much as we were with the short-term picture of winning that peace effort.

So actually, while our planning was sound in the past, we have just about reached the point in time now where, if we want to accelerate the B–52 production, we can effectively if the decision is made by the President and the Congress to do it.

However, before any decision is made as to whether we go to 10 a month, 12, 20, or 24 if you look at the production potential curves of aircraft production at the 2 Boeing plants, it is obvious that no real increase will occur in the first 6 months because the curves are asymptotic in the early period.

IS PRODUCTION PROGRAM "SOUND" FROM FISCAL ANGLE?

Senator SYMINGTON. Would you say current production is sound, from the standpoint of unit cost, in the interest of the taxpayer?

General IRVINE. Yes.

Due to the high cost of this airplane, our endeavors always have been to provide the kind of tooling and control that would produce the airplane with minimum cost, and some of the things we have already done, sir, in the way of compression of the schedule have increased unit costs of some airplanes as much as 5 percent because we are pushing the production machine.

Senator SYMINGTON. Senator Jackson says he has to leave soon. I have more questions but I will be glad to yield to the Senator now.

NUMBER OF B–52'S

Senator JACKSON. I just had a couple of questions.

General, I take it you feel it is sound if our overall objective is 500 B–52s. You feel 20 a month is a sound production rate?

General IRVINE. If we are only going to build 500, 20 is a little bit high.

Senator JACKSON. Twenty is a little bit high.

Mr. Chairman, isn't it 11 wings?

Senator SYMINGTON. Eleven wings of intercontinenal bombers.

Senator JACKSON. That is 495.

General IRVINE. No; not the way I figure it.

Senator JACKSON. Forty-five to a wing.

General IRVINE. Yes; but then we put in 10 percent for so-called command support and attrition, so 11 wings is 598 airplanes.

Senator JACKSON. Is that the goal you are working on, now?

General IRVINE. That has been the published statement.

Senator JACKSON. Let me ask you this, General:

What did you start out to produce, how many? What was the schedule?

General IRVINE. Oh, I think originally we talked about replacing, in the very first part of this program——

Senator JACKSON. What year would that be?

General IRVINE. Oh, looking back, in the 1948–50 period, we were looking at replacing the reconnaissance portion of the B–36 fleet, which was about 4 wings. We were going to replace the reconnais-

sance first, and so the first B–52's that were programed would be our reconnaissance airplanes.

Senator JACKSON. Let's go back a couple of years now, when the first B–52s came off the line. It will be about 2 years in November?

General IRVINE. The first one came off in 1954.

Senator JACKSON. What was our programs of B–52's prior to the fly-bys of May 1, 1955? Let's use that as a starting point.

General GERRITY. We had gotten up to a rate of 12 a month.

Senator JACKSON. The maximum was to be 12 a month, and what was the total figure you were to have?

General IRVINE. We had previously established, before the May fly-bys, because we wanted to set up a second source for a long time——

Senator JACKSON. I don't mean what you all had decided, but what was the established, agreed policy that you were operating under?

General IRVINE. I think that we first talked about——

Senator JACKSON. Approved policy by the Defense Department?

General IRVINE. First, your original question, we talked about 4 wings of 30 airplanes each, reconnaissance airplanes. Then we got up to 7 wings, and then finally to 11 wings of 30 airplanes each, and I think that is about where we were then.

Senator JACKSON. Prior to the May fly-bys?

General IRVINE. In other words, to replace all the B–36's.

Senator JACKSON. Eleven wings. And when were you to finish production? What was the completion date?

General GERRITY. As I recall, some time in about 1959.

Senator JACKSON. Then there was an announcement about a 35-percent increase, do you remember, in June of 1955, a 35-percent increase in B–52's; what did that mean?

General IRVINE. Well, that meant that the activated second source——

General GERRITY. Went to 17 a month.

Senator JACKSON. From how many?

General GERRITY. From twelve.

Senator SYMINGTON. You have a total of 471 B–52's on order. If you add 29 to that, you would get 500 even with the proposed $248 million; right?

General IRVINE. That is correct, sir.

Senator SYMINGTON. But you have no B–52's scheduled beyond 1958. That is calendar year 1958.

General IRVINE. This is not 1957 procurement that gets us up to 500, so the decision you are talking about, how many you build past 500, is what is in the 1958 budget.

Senator SYMINGTON. You are not going to get 500 by the end of fiscal year 1957.

General IRVINE. No; I didn't say that.

Senator SYMINGTON. I am sorry; I misunderstood you.

General IRVINE. I am talking about the ones placed on order. I said fiscal 1957 budget orders; the total, with the most recent change, is 500 airplanes.

We have set up a production base, which is obviously looking at 11 wings of 45 each, and 20 airplanes a month is a reasonable—in fact, a little higher rate than a real production man would set up for 600 airplanes.

Senator JACKSON. I just want to develop this point. Immediately prior to the May fly-bys of 1955, the total number of wings scheduled of B–52's were 11; is that right?

General GERRITY. That is correct.

Senator JACKSON. And they were then 30 per wing. Just this past week or 10 days it has increased to 45.

General IRVINE. The concept came out at that time, Senator, that as a result of our B–47 experience, that all of us felt that——

Senator JACKSON. Well, you have less maintenance problems with the B–52, fewer pilots and people than you do with the 36; don't you?

(Discussion off the record.)

Senator JACKSON. Back on the record. I am going to take about 5 minutes, and get through.

First, my questions are prior to May 1, 1955. We were then to have 11 wings, 30 planes to a wing. That would be 330 planes, plus your additional allowance?

General IRVINE. 495.

Senator JACKSON. Would it be that high? It wouldn't be that high; would it?

Senator SYMINGTON. 10 percent would be 363.

Senator JACKSON. If you add 10 percent, it would not raise it to 495.

General GERRITY. Under the old program where we had 30 U. E. it would bring it to just about 400.

Senator JACKSON. Now, how many were you to produce a month, at the maximum rate?

General GERRITY. Twelve a month.

Senator JACKSON. Twelve a month. And you were to reach that total figure of 400 by when?

General GERRITY. I don't have the figure here, exactly.

Senator JACKSON. Roughly?

General GERRITY. Roughly 1959.

Senator JACKSON. Will you supply the exact date later?

General GERRITY. Yes.

(The statement submitted is as follows:)

We were scheduled to have 400 aircraft in June 1959.

Senator JACKSON. Let's get past the May Day fly-bys when we got a rude awakening.

MORE BISONS THAN B–52'S

The Soviets, I believe, flew more Bisons than we had produced B–52's. I think that is an accurate statement. That is correct, isn't it, General?

General IRVINE. To the best of my knowledge, that is.

Senator JACKSON. That is the testimony that we had earlier.

INCREASE IN RATE RATHER THAN TOTAL

Well, anyway, then what happened as a result of the announcement in the press that there was to be a 35-percent increase? That was the public announcement. What did that mean? Can you just spell that out?

General GERRITY. We then went to a maximum rate of 17 a month.

Senator JACKSON. You went from 12 to 17 a month; is that right?

General GERRITY. That was last summer.

Senator JACKSON. It was announced in June.
General GERRITY. That's right.
Senator JACKSON. What did it do to your total figure?
General GERRITY. At that time it didn't change the total figure.
Senator JACKSON. The 400 remained the same?
General GERRITY. That's right.
Senator JACKSON. All the 35 percent meant, then, was an increased rate of production but not an increased total?
General GERRITY. And getting them so much sooner.
Senator JACKSON. Right.

INCREASE IN TOTAL

Then, as I understand it, there was no change in this figure of 17 per month in the total overall of 400, until the early part of April of this year, when it was announced that two-hundred-odd million would be made available, another hundred-odd for bases. And then the total was increased to what?
General GERRITY. To 20 a month.
Senator JACKSON. Twenty a month. And the total, to what?
General GERRITY. To 500 aircraft.
Senator JACKSON. To 500.
Do you know what happened that caused this increase between June and April; I mean, why the increase in April of this year?
General GERRITY. Sir, of course, we have been looking at this important program right along, as we have gotten out of the development area and into production, looking at our production capabilities versus time, and looking at our needs, and——
Senator JACKSON. But there was no new intelligence information about Soviet capability, was there? I just wonder why it took a year to make these decisions. That is not for you folks, I guess.
General IRVINE. Well, I would like to tell you, Senator, that those of us who are heavy bomber people have always been desirous of having more heavy bombers than we ever get, you see, and we think it is the proper way to spend the taxpayers' money. And so, we have had plans years ago, we had plans for creating a second source at Fort Worth, and our original tooling plans for the B–52 involved a duplicate set of tooling to build 12 airplanes a month at Fort Worth. That was never consummated.
Senator JACKSON. What company at Fort Worth?
General IRVINE. We were going to have Convair.
Senator JACKSON. But, General, the capacity of Boeing, using both Seattle and Wichita, could do all this?
General IRVINE. No; not in this time period we are looking at, because then the shop at Wichita would be full of B–47's.

PHASING OUT B–47'S

Senator JACKSON. I thought you made the decision to phase out the B–47 by August of this year. Doesn't production terminate by August?
General IRVINE. Yes; but if we had set up a second source——
Senator SYMINGTON. He means many years ago.

General IRVINE. This is not the May Day period.

Senator JACKSON. No; but this is what I am getting at; what I am trying to find out is why it took a year to make the decision on this new total of 20 a month.

Let me ask you this: You are just the production man. I don't want to ask you about policy. That is not fair to you.

But wouldn't it have been possible for you to have made the decision on B–52's, and with the industrial resources available, go ahead and shoot for the 20-a-month mark, last May?

General IRVINE. We could have done that, and we could have increased the production rate originally when I was studying this problem. I was on a board that was supposed to decide for Mr. Gilpatric what the proper rates should be, and I recommended at the time that we set up a production of 4 a month at Seattle, and that we set up tooling for 12 a month at a second source.

In other words, just build the second set of tooling, and this, like all major decisions of national importance, involving a great deal of money, kicked around for quite a while before a decision was made. And the decision was finally made to go ahead essentially on the schedule which we now have.

Senator JACKSON. What I am getting at is that you had the industrial resources available last May—you have had them right along—to go on up to 45 B–52's a month with Boeing.

General IRVINE. Yes; subject to the time it would take for acceleration.

Senator JACKSON. Right. Isn't it true, then, that back in May of 1955, we could have agreed on a production rate per month that we didn't finally get until April of this year?

COULD HAVE INCREASED B–52'S EARLIER

General IRVINE. We could have done it then; we could have increased the rate then or the year before or the year before that.

Senator JACKSON. Sure; but I will ask somebody else why it took so long to evaluate these flybys. Just as a layman, I am trying to find out. I want to know in your shop whether you have the industrial resources to do the job. The answer is "yes"?

General IRVINE. Yes.

Senator JACKSON. Now, Mr. Chairman, I don't want to duplicate anything. You can produce up to 45 B–52's at Wichita and Seattle combined, can't you?

Senator SYMINGTON. Senator, time is the only problem, the most important problem, in my opinion, to the free world.

I know Senator Duff and all of us want this committee to get the facts out on the B–52. You take all the time you want Senator Jackson and ask all the questions you want.

COULD PRODUCE 45 B–52'S PER MONTH

Senator JACKSON. I am just asking the factory people. I don't want to get you off on policy. I want to find out what your capabilities are under your command.

On the B–52, you have the definite capability of going to 45 per month, considering Boeing's resources at Seattle and Wichita?

General IRVINE. Yes.

Senator JACKSON. Now, at the present time, you are running a full 8-hour shift at Boeing and a 5-day week, 8-hour day, and the second and third are on what kind of a basis?

General IRVINE. Oh, it is about 58 percent on the first shift; about 35 percent on the second, and about 6 percent on the third.

Senator JACKSON. Fifty-eight percent on the regular 8-hour day shift, so you can add 42 percent there.

General IRVINE. Yes; the other 42 percent is distributed over the second and third shifts.

Senator JACKSON. What is the second shift?

General IRVINE. It is about 36, as I remember it.

Senator JACKSON. So you can add more there. And the last 1 is 8. You have 92 percent addition on the third shift.

General IRVINE. Well, I would not want to do that, but pretty obviously, you can double the effort without too much trouble.

Senator JACKSON. Now, what is your KC–135 capability per month maximum?

COULD PRODUCE 35 KC–135'S PER MONTH

General IRVINE. We are now programed to go to 20, and we feel without any difficulty, we could go to 35 at that plant.

Senator SYMINGTON. At the 1 plant you could go to 35 from 20?

General IRVINE. Yes, sir.

Senator JACKSON. We do big things out there. I just want to repeat something——

Senator DUFF. That is what makes the fish so big out there.

Senator SYMINGTON. You don't mean the fish stories, just the fish.

Senator JACKSON. We will give the East a little credit. I will tell you something that is quite interesting.

Many years ago, in the twenties, Guggenheim gave a grant to the University of Washington to set up an aeronautical engineering school. We in the University of Washington and the University of Alabama, and one other place, got the grant. As a result the university I had the honor of attending turned out the men who did the design, the engineering, the know-how on the B–17, the B–29, the B–50, the B–47, and the B–52.

Senator SYMINGTON. Jim, that doesn't leave much for Pennsylvania and Missouri.

Senator JACKSON. The boy I used to play with around the corner, George Martin, is now chief engineer, and you may know him.

General IRVINE. Very well.

Senator JACKSON. I know this story by heart, because I have watched this thing grow since I was a kid. It is proof of what a good investment can do, if the money is put in a fertile field where they have got the know-how.

General IRVINE. The tooling on this airplane is good enough so we are already about $50 million below our original estimate as to what the program is going to cost.

Senator JACKSON. But didn't the know-how come out of the University of Washington, most of this design work?

Senator SYMINGTON. If you keep on praising Washington instead of asking questions, I am not going to yield any more time, because I have a few questions here myself.

Senator JACKSON. All right.
That is true, isn't it?
General IRVINE. Yes.
(Discussion off the record.)

SOVIETS' LEAD TIME

Senator JACKSON. Now, one other thing. You mentioned about lead time. General White, I think, has made a talk in which he said the Russians have cut in half our lead time on the B–52.

General IRVINE. He was talking about, I think, a number of things, when he talked about lead time. One of the things was the so-called administrative or decision lead time.

Senator JACKSON. I mean the time taken to get it off the designing board and produce the prototype. That is lead time, isn't it?

General IRVINE. I would say it might be more accurate to say that they did it in about two-thirds of the time.

Senator JACKSON. Don't you feel that if we have to have a force "in being" in the air atomic age—if that is a sound philosophy of defense on which to proceed—then we have to demonstrate to the free world an ability to produce the decisive weapons systems with the same productive capability in peace that we would in war?

HAVE TO FIGHT WITH FORCES "IN BEING"

General IRVINE. As a professional soldier, it is my opinion that you fight the war with the Air Force and the other things you have in being, in commission, in position when the war starts.

Senator JACKSON. Right. We have won the last two wars because of our ability to rally our people in time of war. We have done most of our producing after the war started; is that right?

General IRVINE. Right.

Senator JACKSON. Should we not demonstrate with respect to crucial weapons a productive capability now, in peacetime comparable to what we demonstrated in wartime?

General IRVINE. When I was in SAC, Senator, I was one of General LeMay's adherents who believed strongly that no Air Force had any value unless it was in existence and ready to go, bombs aboard on very short notice. In other words, within the tactical warning time that you would have.

Senator JACKSON. Right.

Sometimes I have been told, "Well, Senator, you are getting scared here. A lot of these things you want done would be fine if we were at war."

But that kind of an answer is wrong. If war starts I think your airplane production facilities will be in a nuclear graveyard instead of in a state of readiness to produce; isn't that right?

General IRVINE. That is one of the reasons why we wanted a second source, because we thought Seattle could be one of the possible targets.

Senator JACKSON. I merely wanted to get your ideas about the need to have a capability of turning these planes out so we can get them and not stretch out the process forever, and count on a period of war in which to get the balance. We will fight with what we have in being.

General IRVINE. That's right.

Senator JACKSON. Mr. Chairman, I think that is all.

Senator SYMINGTON. Senator Duff, I have some more questions, but you have been very patient. I would like to yield to you, sir.

Senator DUFF. Well, I am very impressed by what the General said a moment ago, and with all respect to the necessity of these new bombers, what concerns me is that if you get them, you are not going to have the bases to put them on. You are not going to have the men to fly them, or you are not going to have the mechanics to repair them, unless there is a change in that picture; is that correct?

IMPROVEMENT NEEDED OVERALL

General IRVINE. Yes. The entire picture needs improvement, sir. I want to make one thing very clear, Senator. I am not criticizing anybody for the things that have happened across the years, but this has been an accumulation of things that have happened, and the lack of complete understanding, and I think it is most unreasonable to ask you gentlemen in Congress, in the House or the Senate, to fully understand the problems that we face as professional military people.

And some of them are difficult enough for us to understand. This problem with our airmen is something that we hadn't fully realized until we began to bring new equipment, such as the F–100, into our system. Perhaps we haven't done our job in forecasting our needs as well as we might have.

When I say the F–100 was the catalyst in this whole thing, we acquired an awareness in the Strategic Air Command and the Tactical Air Command that we must do things better than we were doing to get the results that the taxpayers are paying for.

Senator JACKSON. I have enjoyed your testimony very much, General. I have to leave.

Senator DUFF. Without endeavoring in any way to disparage the necessity of new planes, it seems to me imperative in the first order to get these technical men of high professional efficiency that you can keep both as flyers and mechanics, and if you don't solve that problem, getting more planes is not going to solve anything.

LEGISLATION NEEDED

General IRVINE. Legislation is required to solve this problem first. I would like to point out there, sir, that many of these things are not expensive at all.

Providing housing for people on or adjacent to the base so the alert concept can be a real and living thing is something that costs you nothing over a period of time, because I am paid, or any other person in the military is given a sum, an allowance for quarters which is paid out by the Government in cash, if you don't furnish the house.

Some of these houses, like the ones out at Bolling Field, have been paid for 3 or 4 times over already by the fact that the quarters allowance was not paid to personnel living there. Some improvements, like the increase in pay for specialists that has been proposed, is an immediate outgo in that particular fiscal year. It is an expenditure soon after it is authorized, and these expenditures might vary from fifty to a hundred million dollars a year for the Air Force, depending upon how much you do.

FALSE SAVINGS

However, I think for every dollar that is spent in that area, you will save 2 or 3 in capability of the force, and a very tremendous cost in training.

This is hard on a Scotsman to see the cost of our training establishment, where we are running new people through every year and we keep them for one enlistment. We have, I think, 20 percent of our total effort—I am not precise about that—about 20 percent of our total expenditure goes in to the housing and feeding of the people you are training, and the pay of their instructors, and general support of the training establishment.

So that is why all of us feel so strongly about the need for improvement in this area.

I noted when I was in the Strategic Air Command that one of the reasons that we got the B–36 program going was because we were authorized to make spot promotions to people who met a higher than normal standard of excellence in carrying out a bombing mission.

If a crew, for a period of a year, could reach and maintain a standard of operation of their aircraft that was deemed by many to be impossible, then each member of the crew would be promoted one grade.

Senator SYMINGTON. General, I don't want to interrupt you, but I know we are going to have a record vote pretty soon on this amendment on flood control of Senator Knowland's. I am watching the clock, and have some more questions to ask you.

If you would like to make a record of what you would talk about with respect to personnel at this point in the record, we would like to have it. If we leave shortly to go to vote, that takes 15 or 20 minutes. I know you would like to finish tonight, and we would like to finish tonight.

PERSONNEL

Then we would ask you to wait until we get back. Please make a file here of what you think about this whole question of personnel, that you were developing, and place it in the record at that point.

General IRVINE. Yes, sir.

(The exhibit referred to is as follows:)

RECRUITMENT AND RETENTION OF SKILLED TECHNICIANS

The most serious problem today within the Air Force is that of recruitment and retention of skilled technical personnel to maintain and operate our modern complex weapons systems. A great deal has been written on this subject. The article written by Mr. John G. Norris for the Washington Post and Times Herald entitled "Tech Famine" vividly described the effect of this problem on the Strategic Air Command. This problem is not restricted to the Strategic Air Command, but rather is common to the Air Force in general. Similar statement of the problem was recently made a matter of the record by Mr. Holifield, Representative from California, in the Congressional Record for March 13, 1956, as regards the personnel problems within the Air Defense Command. Mr. Holifield also brought out the problem of the Strategic Air Command. The problem has been stated in many different ways and by all means of expression. Satisfactory resolution of the problem still faces us.

This problem has been given special consideration during the past few years. In 1953 the Womble committee (an ad hoc committee on the future of military service as a career that will attract and retain capable career personnel) made a number of recommendations to improve career retention. Many of the recom-

mendations were implemented; others await legislative action. More recently an interservice Task Force on Military Career Incentives was established with responsibilities in the area of career retention, giving special consideration to the Womble committee type programs such as the survivor benefits bill and the dependent medical care bill. The special attention given to the retention problem has been effective and can be demonstrated.

During the last session of the 83d Congress and the 1st session of the 84th Congress the reenlistment bonus bill and the Career Incentive Act of 1955, respectively, were enacted. Both had, as their central purpose, the retention of qualified personnel. The beneficial offset of these enactments has been felt.

The Career Incentive Act of 1955 marked a departure from the historical method of awarding military pay. Special consideration was given to areas in the grade structure in which retention was especially desired and compensation in these areas was suggested in a greater degree than in other areas. The necessary result was that retention was improved in the areas desired beyond what would have been affected by an average payment.

An inherent weakness, however, in both the reenlistment bonus (1954) and the military pay increases (1955) is that they apply across the board, in this respect, that every staff sergeant with a stated amount of service receives the same benefit without regard to the degree of skill, the amount of supervision he provides or is supplied, the Government's investment in time and money for training, mission essentiality, competition with industry for the skill, and other factors. With changes in the nature of basic employment in the service, and with military skills, which formerly were largely unidentifiable with civilian skills, becoming more and more closely related to civilian skills, the old concept that one sergeant is as valuable, or is entitled to as much pay, as the next one is becoming just as impracticable in the military service as it is in private industry. Our efforts to make the service more attractive to that individual by raising the pay of all persons is not the best answer from the standpoint of the Department or the taxpayer. There would simply not be enough money to meet the payroll if everyone were paid what an electronics engineer should be paid. Since there isn't enough money to solve the problem by that method, the specialist is unhappy on two counts: First, he isn't getting as much money as he feels he deserves; and secondly, the less skilled member is making as much as he is. It is believed that the old philosophy that one man is worth as much money as another is no longer acceptable.

It is my opinion that the major portion of the solution to this problem is to establish an equitable pay for the skills we need. We cannot expect to retain the caliber of young men that are needed to maintain and operate today's complex weapon systems unless we at least meet the competition for his talents. This means that his pay must be equitable and that the military environment must enhance his retention.

During the last quarter of 1955, a period which provides a clean rate unclouded by special short discharge programs, the annual first-term reenlistment rate averaged about 20 percent. The reenlistment rate for hard-core personnel (technical skill fields) was only 16 percent, whereas that in the soft-core areas was 23 percent.

I strongly believe that equitable pay for technical personnel will serve the following purposes:

(*a*) Reduce the high loss rate in critical skills.

(*b*) Increase the performance capability of the Air Force (including a reduction in the aircraft out of commission rates and in abort rates).

(*c*) Give recognition to the airman for demonstrated ability in skills of particular value to the service. Encourage continued proficiency in such skills.

(*d*) Reduce the considerable cost of training recruits as replacements for members who leave the service on the completion of the original enlistment.

(*e*) Provide a greater return on the investment training cost of the member through the continued utilization of his services at a time when he is fully productive.

(*f*) Release personnel presently assigned to the training function to more effective employment.

In addition to the difference in the performance level of the member in his first enlistment and the member in his second enlistment, there is a considerable difference in the length of their relative periods of productive activity. For example, a bomb—navigation systems mechanic is fully productive for only 1½ years of his first enlistment since 2½ years are covered in formal training and in on-the-job training. During the second enlistment he is fully productive for substantially the whole 4-year period. Since the total invested cost in

such a member is $22,500, if we receive only a year and a half of fully productive activity in return, we are paying $15,000 per fully productive year. If the member can be induced to reenlist, and the costs stated amortized over a 5½-year period, the cost is reduced to slightly over $4,000 a year. A second reenlistment further reduces the cost. The example demonstrates the great need for encouraging first termers to reenlist. If the training cost can be justified, then a fair and equitable pay that will induce the member to remain in service can be justified.

The lack of skilled personnel has a serious effect on operations. A B–47 major inspection takes 7 days down time instead of 3; an engine change requires 120 man-hours instead of 60; preventive maintenance has become extremely difficult, resulting in a high incidence of breakdown and inflight aborts. Combat readiness is compromised by the length and frequency of groundings. Utilization of more effective personnel will not only reduce the cost of the maintenance mentioned, but will serve to improve the in-commission rates, thus putting more aircraft into the air, and to reduce the abort rates, thus further increasing the number of aircraft that reach the target. In time of war, these values are incalculable.

We are plagued by shortage of military housing at most bases. Our airmen must seek housing oftentimes at great distance from their bases. The cost of these rentals oftentimes exceed the allowance not including the costs of travel to and from work. In the critical housing areas, the cost of rentals far exceed the housing allowances and no consideration is given to these differences. Providing sufficient military housing is a necessity. The dollar cost of the program can be readily amortized in terms of rental allowances now being paid in lieu of quarters.

We must find the solution to the personnel problem. It is vital to the defense of the United States. We need enactment of the currently pending legislation for military housing and medical care. We need further legislation that will enable us to offer equitable remuneration for the skills we need.

SCIENTISTS AND ENGINEERS

Senator DUFF. Mr. Chairman, just one further observation in line with what the general said a while ago.

With the constantly increasing number of scientists and engineers that the Russians are developing, unless we increase our educational base at high school level irrespective of what we do with this, in a few years we are going to be outstripped anyhow.

One of the things the American people ought to be alerted to is unless we realize the necessity of professional training in high school that will enable students to take scientific education, in the next generation we are going to be sunk.

The time to begin is right now. Do you agree with that?

General IRVINE. I agree.

Senator DUFF. I think that is fundamental in the whole picture.

General IRVINE. Yes, sir, very.

INCREASED PRODUCTION REDUCES COSTS

Senator SYMINGTON. To get back to the B–52, isn't it true that if you increase production in a plant, you always ultimately reduce the unit cost?

General IRVINE. I think that is normal. The cost may increase slightly at the initiation of an increase, but as you level off at a higher rate——

Senator SYMINGTON. You have a new learning curve to face as you increase production, but ultimately you get costs down.

General IRVINE. Yes, sir.

ANOTHER LOOK AT "SOUND" PROGRAM

Senator SYMINGTON. Then when you talk about the word "sound," and I read it and reread it, what you really mean, do you not, is that you consider it sound within the framework of your present budget ceiling which embraces the financial and manning limitations given you.

General IRVINE. I said it was sound in the environment in which I find myself.

Senator SYMINGTON. Is it a fair statement to say that environment embraces the financial and manning limitations?

General IRVINE. Considerations involving base construction and overall limitations, yes.

"OPTIMUMS" CHANGE

Senator SYMINGTON. Now you say that the Air Force believes peak production rates established for the KC–135 and the B–52 are the optimum within the present program. Isn't it a fact that in May 1955 the Air Force believed that 12 or 13 B–52's a month was the optimum within that program?

General IRVINE. I am not sure. I think so.

Senator SYMINGTON. How about that, General Gerrity? You know that story.

General GERRITY. Yes, sir; at that time we felt in our judgment that was a good, sound program.

Senator SYMINGTON. So that the optimum at that time was 12 and the optimum now is whatever it is, I believe 20.

General GERRITY. Of course at that time we were looking toward a lesser number of aircraft.

SHORTAGE OF TANKERS

Senator SYMINGTON. Do you know that there are a total in TAC of many too few tankers in the Zone of Interior today capable of taking even a small number of TAC fighters aboard with two refuelings required on the way? (D)

General IRVINE. Yes, but we are in the process of refixing B–50's to make tankers out of them.

Senator SYMINGTON. As they have B–50's in the command, but the B–50's have to drop to relatively low altitudes. (D) Wouldn't you say that the life of a fighter pilot in TAC is worth as much as the life of a fighter pilot in SAC?

General IRVINE. This again is priority of programs. Let's face the fact in the Air Force that the missile program and the long-range bomber program are considered of first priority.

Senator SYMINGTON. And the reason for the relatively poor equipment in TAC is because of the prior priority of the other programs?

KC–135 PROGRAM

General IRVINE. Well, we have accelerated the KC–135 program so that at the time we would have 600 B–52's, we would have roughly 400 tankers.

Senator SYMINGTON. What is that now about the KC–135 program? Have you the schedule on the KC–135 there?

General GERRITY. Yes, sir.

Senator SYMINGTON. My record shows that the total KC–135's on order are 194. Is that incorrect?

General GERRITY. 194. (D)

General IRVINE. That will bring us up to a rate of 20 a month. (D)

Senator SYMINGTON. All I am talking about is delivery because you can't fly orders. I remember when Assistant Secretary Rosenberg came back after watching the Marines and the Air Force trying to fight in Korea with inadequate equipment, she said, "Send them out the blueprints and show them how to fly the blueprints you are always talking about."

General GERRITY. That is correct. (D)

Senator SYMINGTON. Actually you do not get your 194 ordered KC–135's for some time?

General GERRITY. That is correct.

Senator SYMINGTON. What was that talk about 400 KC–135's?

General IRVINE. Our present schedule, if you continue production at a rate of 20 a month beyond the fiscal 1957 order period——

Senator SYMINGTON. Just a minute, there is no rate of 20 a month. The total production in the middle of the fiscal year 1958 is seven a month on the KC–135's.

General IRVINE. You are talking about deliveries.

Senator SYMINGTON. That's right; that is all that counts.

General IRVINE. And if we continue deliveries and this requires more orders in fiscal 1958, if you continue at that rate we would have the required number of 400 to match the 598 (D) in several years.

Senator SYMINGTON. If you are planning that, why don't you order them in fiscal year 1957 so you can get them?

General IRVINE. Senator, I plan production schedules on the basis of the instructions I have and the money I get to place the orders.

Senator SYMINGTON. I understand that, General, but you said—I don't remember the words—but your implication was that the ratio of tankers to bombers was sound, and yet General LeMay said he would prefer 1 to 1, and on any basis 3 to 2 and your production schedules don't show you are going to get anything like that.

I was wondering, especially because of your experience in SAC, why you felt it was sound. All we want are the facts.

COMPROMISE DECISION

General IRVINE. This has been an Air Staff decision that, like most Air Staff decisions, is a compromise. LeMay would like 1 to 1, but we felt that we would put more of our money on bombers and have a ratio of 3 to 2.

Since the airplane started production about a year and a half behind the B–52, an acceleration to catch up with the bomber is obviously impossible.

Senator SYMINGTON. But you said that you could make 35 a month in that plant in Boeing.

General IRVINE. Yes; but you see—

Senator SYMINGTON. One plant. You are making B–52's, a total of 20 a month in 2 plants.

DELAY AND CALCULATED RISK

General IRVINE. This is maybe looking at a mistake we made earlier. Maybe we should have started KC–135's sooner, but based on the decision made and the time it was started, we are not going to get the first production airplane until later this year, this fall, so whether you accelerate to a rate of 35 a month or whether you stay at 20, you can't catch up until some later period, so you take a calculated risk on having a reasonable production.

Obviously if you go to 35 a month, that is at a rate that is very expensive production-wise because you wouldn't maintain it very long.

Senator SYMINGTON. But you could have another source or you could build another plant.

General IRVINE. It would cost you $125 million to start another source.

Senator SYMINGTON. We are not talking about money now. We are talking about security. I know you would probably need some more money.

RATIOS

But let's get back to this question. You say General LeMay wants 1 to 1 and the Air Staff decides 3 to 2. My records show here from the Air Force that you have got 471 B–52's on order and 194 KC–135's on order, so that you are not getting anything like a 3-to-2 ratio. Your KC–135's on order are about 41 percent of your B–52's on order.

General IRVINE. Our plan is to buy the additional B–52's to get up to the program in number. (D) In this case it would get us up to 598 airplanes.

Senator SYMINGTON. I don't want to belabor the point, but aren't you not only going against what General LeMay wants but also going against what the Air Staff wants, the 3-to-2 ratio, if you are ordering the B–52's now in the fiscal year 1957 in your program? Why don't you order the KC–135's too to get even your 3-to-2 ratio?

General IRVINE. Unless you are going beyond a rate of 20 a month, which is determined an economical rate, you don't have to buy any more than that on the lead-time basis, and we never buy any further ahead than we have to.

Senator SYMINGTON. Beyond 20 a month on what?

General IRVINE. On the KC–135's.

Senator SYMINGTON. And you say beyond that would be uneconomical?

General IRVINE. No; we could increase the number. Again if you go to 35 a month, we would get another of these situations where you are running at a peak rate for too short a time for it to be economical.

Senator SYMINGTON. Because three-fourths of SAC are medium bombers, the shortage in tankers is hard to understand, considering the vital importance of tankers to these B–47's, the core of SAC, which people such as the President and Mr. Churchill constantly talk about as the "great deterrent."

Now again I say so long as we understand each other on this thing your B–52 production, as you have reported your future schedule, totals 471 B–52's, and your total schedule of production of KC–135 tankers, which I believe we will agree are absolutely essential to the effective functioning of SAC; is that a fair statement? (D)

General IRVINE. Yes.

Senator SYMINGTON. Your total on order are 194, and 194 is about 41 percent of 471. (D)

Therefore, I don't see why we are talking about 3 to 2 ratio, let alone 1 to 1. Those are the facts that have been given us by the Air Force, which we have studied and are coming back to you with.

General IRVINE. Well, that checks fairly closely. I have 473 B–52's in the same period, and 213 135's.

Senator SYMINGTON. Our record shows 194, but those figures would still be well below 50 percent.

General GERRITY. However, Mr. Chairman, producing at the rate of 20 a month, we will have the 2 to 3 ratio in several years. (D)

Senator SYMINGTON. No you won't because in the first place you are not producing that, and in the second place it would depend upon when you got to 20, and in the third place you are not scheduled at any place to 20 for several years. (D)

General GERRITY. We are just building up to that point. (D)

Senator SYMINGTON. That is just what I said, so how can your story stand up, because you will have 471 or 473 B–52's, and therefore if you are going to go to a 3 to 2 ratio, you ought to have a great many more KC–135's—in order to say you are having even a 3 to 2 ratio on KC–135's. (D)

We will have another hearing on it if necessary to discuss it some more.

Let me ask you this point now. With all due respect to SAC, SAC is not the whole Air Force. How about the fellows in TAC? Don't they need tankers?

General GERRITY. Sir, we are programing B–29's and B–50's for them now. (D)

OBSOLETE TANKERS FOR TAC

Senator SYMINGTON. Now, am I to understand that the program of the Air Force today is that we are going to have KC–135 tankers for SAC instead of the obsolescent C–97, KC–97's, but when it comes to TAC we are going to have the obsolete, low altitude, nonjet tankers of the B–29, B–50 type? Is that your program?

General GERRITY. That is our program. (D) We will use the KC–97, the B–50 and B–29.

Senator SYMINGTON. It is programed through to the middle of 1959; isn't that correct?

General GERRITY. Fiscal 1959.

POSSIBILITY OF LOSS OF PLANES AND PILOTS

Senator SYMINGTON. We asked General Weyland in testimony what would happen if the gong rang and he sent 3 wings of 225 airplanes plus to Europe. These fighters would need two refuelings. We asked what would happen if those fighters ran into weather, with B–29's and B–50's as tankers. He said it wouldn't be good. Would you argue with that, General Irvine?

General IRVINE. No; it is quite accurate.

Senator SYMINGTON. And we would probably lose, on that basis, quite a few planes; wouldn't we?

General IRVINE. Yes.

Senator SYMINGTON. And presumably some pilots; would we not?

General IRVINE. Yes.

Senator SYMINGTON. Do you think the American families who send boys into TAC would be willing to see their chances considerably less, in case of war, of surviving, than the families who send their boys into SAC? This because of inferior equipment.

General GERRITY. As General Irvine brought out earlier, we started out about 18 months later on this KC–135, and it is just in its initial stages of production now, and we have still got a lot of testing to go through before we can build that program up, no matter what we would like to do, and having started out later, we have built the production ratio on the airplane higher than the 2-to-3 ratio would normally be.

For example, building 20 a month rate on the B–52, you would normally say a 2-to-3 ratio.

Senator SYMINGTON. How can that add up, General. In the last 13 months, to be safe, you have twice increased the schedule of the B–52's. Nevertheless, you have not in anyway increased any schedules on the tankers that we know about at this time.

TANKER INCREASE

General GERRITY. Yes, sir; we have.

Senator SYMINGTON. What were those increases?

General GERRITY. We increased—originally, we bought a small quantity of these tankers from Boeing, and our maximum rate at that time was about eight a month.

At that time we hadn't decided where we were going to get the largest quantity. We had a competition between Boeing and Douglas on that, and Lockheed, and after we made the decision that Boeing could produce the tanker in the greatest numbers at the earliest date——

Senator SYMINGTON. When did you make that decision?

General GERRITY. I can't recall the exact date. As I recall, it was in the fall of 1954.

General IRVINE. That's right.

Senator SYMINGTON. If it was in the fall, you decided to go full speed ahead with Boeing in the fall of 1954 on the 707, KC–135; is that right?

General GERRITY. That's right, sir.

Then we took a schedule of about 15 a month at that time, and at that time our schedule on the B–52, I think, was 12 a month.

Senator SYMINGTON. Yes?

General GERRITY. It was last year when we went up to 17 a month on the B–52, that we decided to hit for a goal of 20 a month on the tanker, so we have increased the tanker on a somewhat comparable basis to the bomber increases.

Senator SYMINGTON. Somewhat comparable is no 3 to 2 ratio, because you don't get to 20 on the tanker for several years. (D)

General GERRITY. That is correct; with a fairly rapid production buildup, once we have gotten through the test period.

Senator SYMINGTON. I am sorry, but I see no rapid production buildup in the schedule I have in front of me on the KC–135.

General GERRITY. For example, in a year's time we have more than doubled production, from 7 a month to 19 a month.

Senator SYMINGTON. That's the future plan. Let's read the schedule. (D)

Do you call that a rapid buildup?

General GERRITY. I was talking—if I can qualify this, Mr. Chairman, I was talking—about after we get through the test period.

TEST PERIODS AND BUILDUPS

Senator SYMINGTON. What do you call the test period? You get one in October.

General GERRITY. During the period of October to, say, about mid-next year, we will be going through accelerated tests of about half a dozen airplanes.

Senator SYMINGTON. Mid-next year, or mid-this year?

General GERRITY. Mid-1957.

Senator SYMINGTON. All right. Let's take it from mid–1957.

General GERRITY. From there on, based on feeding any corrections—— (D)

Senator SYMINGTON. Let's look at it.

Now, would you call that a rapid buildup, one a month addition to the line?

General GERRITY. That is a reasonably rapid buildup, looking at the level-off point we are shooting for, sir.

Senator SYMINGTON. And what is the level-off point that you are shooting for?

General GERRITY. Twenty a month. (D)

Senator SYMINGTON. Yet, before the recent buildup of the B–52's, you were running tanker production ahead of the B–52 production planned, were you not?

General IRVINE. As a comparison for information, sir, if we made the decision now to go to 35 a month, we would reach 30 in production at about the same time we now plan to reach 20.

Senator SYMINGTON. Thank you, General.

Then you might get near the 3-to-2 ratio that the Air Force decided was right, but no 1-to-1 ratio; is that right?

General IRVINE. Mr. Chairman, I said in my prepared statement that if I have the instructions to build airplanes, we can build them.

LIMITATIONS ON PRODUCTION

Senator SYMINGTON. And the reason that you don't have that is some limitation, regardless of what that limitation is, beyond your control; isn't that correct?

General IRVINE. That is quite accurate.

Senator SYMINGTON. I thank you for that. Again, all we want are the facts.

This word "optimum" might be misleading, as I see it, because if the optimum 13 months ago was 12—we have agreed that it was—and the optimum after the Russian flyover was 17, which we have agreed it was, and the optimum now is 20, which we agree it is, we have a good many optimums around.

Why did the KC–135's start 18 months after the B–52?

General IRVINE. For a long time we have been examining the best way to meet our requirements, and at the time of the B–47 program

it appeared that the earliest way to meet our refueling requirements was to take a reasonably existing airplane, the C–97, and make a tanker out of it, so we could meet our requirements in time.

Anyone familiar with tactical refueling knows that the so-called buddy principle of having airplanes of comparable performance, tanker and refueling, is the very optimum.

One, if you can get it engineered, and, two, if you can afford to build it. The very optimum in LeMay's operations would be to be able to refuel a B–47 twice, once inbound and once outbound, with a lot of gamble, of course, on a rendezvous on the outbound.

It was that desire for greater flexibility and greater reliability that, after a number of agonizing reappraisals of how best to get at this, made us feel in SAC—now, I am talking as a SAC member—we would like to have a jet-powered piece of refueling equipment. And so we started a competition.

In retrospect, we should have started this competition sooner. But we did start it, and Boeing won it, for the very simple reason that they had put about $15 million of their own money into a calculated gamble, for which they have my deep admiration.

I think the country owes them quite a bit of consideration for that gamble. And we made the decision to stay with a single source because, for the number of airplanes we are talking about, the tankers to support 11 wings, it would have cost us about $300 million more to build half of them in a second source, about half of that being the costs of tooling up the other factory and the other half the fact that you didn't get, as you well know, down the learning curve as quick for that number of airplanes.

PRODUCE WITH MONEY AVAILABLE

I think you must agree with me, Mr. Chairman, that in these affairs people like me program to do the job that is required of us in a minimum time and for a minimum cost. This is my responsibility.

Senator SYMINGTON. With the money available; is that correct?

General IRVINE. Yes, sir.

Senator SYMINGTON. General Irvine you stated the established maximum production rate for this airplane is designed to obtain appropriate bomber-tanker ratio for the B–52 program. That is roughly what you said.

General LeMay has testified before this committee, I believe, that we would be short hundreds of tankers by 1959. (D)

So we will check the record and find out exactly what the figure was he said he would be short.

May I also point out that in addition to his shortage, you have a shortage in TAC you plan to make up with an airplane all of us will agree is obsolete.

The testimony of the Tactical Air Command was that there are very few B–29's and no B–50's today in the Zone of the Interior, in case we wanted to send some fighters to Europe. (D)

I went to Europe with Dave Shilling in the summer of 1948, when he took over the first fighter wing that flew the Atlantic, so I know something about the problem.

I can't understand why we plan a reasonably good tanker program, even though it is short, for SAC, and in effect no tanker program

except with obsolete airplanes, for TAC. Isn't that a fair analysis, General Irvine?

NO OPTIMUM PROGRAMED FOR TAC

General IRVINE. We have not programed the optimum solution for TAC.

Senator SYMINGTON. Have you anything programed for TAC, beyond the B–29's and the B–50's?

General IRVINE. Not at the moment, but with the understanding, I believe, that at some point we put the B–47's out to pasture, and the KC–97's at that period of time would be usable to the same degree the B–50's are in this time period.

Senator SYMINGTON. In other words, when the B–47 becomes obsolete, you plan to use them for TAC tankers; is that it?

General IRVINE. Unless we have something else programed to build.

Senator SYMINGTON. There are other planes you could program. You could build more KC–135's, couldn't you?

General IRVINE. Yes, sir.

Senator SYMINGTON. Have you ever thought about using the C–132's as tankers?

General GERRITY. Yes, sir; we have.

General IRVINE. This is one of the very attractive things about that airplane. Again, in spite of its tremendous starting costs, we felt there was an airplane that is of tremendous value as a cargo carrier at low cost per ton-mile, and at the same time would be able to refuel a number of small airplanes.

Senator SYMINGTON. In the C–132?

General IRVINE. In the C–132's, because that airplane, rather than the C–133, operates at a high altitude.

CURTAILMENT OF PRODUCTION

Senator SYMINGTON. We have been talking for some time on B–52's. I recognize you have been badly curtailed because of lack of funds, but in all fairness, isn't it right that a boy in the Tactical Air Command should have the same refueling possibilities in case of weather as a boy in the Strategic Air Command?

General IRVINE. Put on that basis; yes, sir.

Senator SYMINGTON. Isn't that fair, if you are a fighter pilot in TAC? I will show you some letters sometime. At least some people think so who are involved.

I just have a few more questions here that I would like to ask. I have asked a lot of these before. I might close with a summary question.

A MATTER OF POLICY, NOT OF CAPABILITY

It is true, is it not, that our failure to produce as many B–52's as the Bison long-range bomber production of their intercontinental bombers was and is a matter of policy and not United States capability? Isn't that a fair statement? (D)

General IRVINE. That is correct.

We could have accelerated this program any time we chose to spend the money, beginning—and here, again, it is how much of a production gamble you want to take and how much you want to rely on the engi-

neering capability of a great organization like Boeing—we could have accelerated the program in 1951, 1952, or any time since.

BOEING

Senator SYMINGTON. Well, the American people have relied on them for big bombers for a long time, haven't they?

General IRVINE. Yes.

Senator SYMINGTON. They made the B–17's, B–29's, and B–50's, B–47's.

General IRVINE. I have laid my professional head on the block for Boeing about five times, as you well know.

Senator SYMINGTON. The final grouping of questions. I am trying to get some figures here.

COST OF INCREASING PRODUCTION

As I understand it, we could go to 24 planes a month instead of 20 for a planned expenditure of about $2 million.

General IRVINE. That is at Boeing. There would be some additional expenditures in the engine plant, for example.

Senator SYMINGTON. And for about $9 million, exclusive of machine tools, which, of course, would require additional funds, that would be, in effect, variable, and not fixed overhead, you could go to 46 per month. Is that about right?

General IRVINE. Yes, that is approximately right.

General GERRITY. Mr. Chairman, are you talking about the airframe manufacture only?

Senator SYMINGTON. That's right.

General GERRITY. I think, to take care of the whole complex, it would be around $80 million.

Senator SYMINGTON. Are you talking of machine tools?

General GERRITY. Yes.

Senator SYMINGTON. I said exclusive of machine tools.

General GERRITY. Excuse me.

Senator SYMINGTON. That is all right. Machine tools are variable overhead. The more work you do, the more tools you have got to have, just like you have got to do with tools that go into machine tools, dies, and fixtures.

AIRCRAFT ENGINES

Now, a final group of questions. As I understand it, the J–57 is being used in the B–52?

General IRVINE. Right. (D)

Senator SYMINGTON. As I get it, the thrust on the medium bomber that Tupelev had dropped into London with is figured at around 18.5 and 21.5; is that correct?

General IRVINE. It is somewhere around that, to the best estimates.

Senator SYMINGTON. Mr. Counsel, have you any further questions?

AIRCRAFT PRODUCTION SCHEDULES

Mr. HAMILTON. I wondered if we could get with respect to the B–52 and the KC–135, copies of form WA–56–1. Wouldn't that give us the schedule, General Gerrity?

General GERRITY. Yes, and I believe the committee has already got it.

Mr. HAMILTON. We haven't had it since the revision. That was my point.

General IRVINE. We will furnish that.

[The requested document, classified "Confidential," has been filed with the subcommittee.]

Senator SYMINGTON. I think it is a good point if you will be sure we get any revisions, because we operate through the staff of the Military Preparedness Subcommittee. Mr. Engle is working with us on this.

Any other questions?

APPRECIATION

General, I think Senator Duff will agree with me this has been one of the most informative briefings we have had, and we are very grateful to you.

Senator DUFF. I would say it is the most informative.

Senator SYMINGTON. I would agree to that, and I am glad to see you looking so well.

(Thereupon, at 5:55 p. m., Thursday, May 10, 1956, the subcommittee adjourned.)

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